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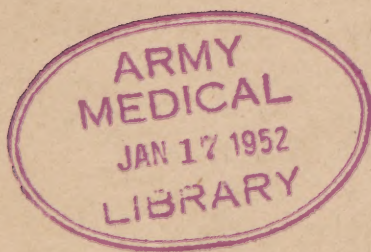


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WAR DEPARTMENT TECHNICAL MANUAL

TM 8-500

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Army  
U.S. Surgeon General's Office

# HOSPITAL DIETS



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For explanation of symbols, see FM 21-6.

F. I. +



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## CHAPTER I

### GENERAL

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#### 1. Purpose

The purpose of this manual is to provide a suitable guide in the arranging, ordering, and preparing of diets not only for the average patient under usual conditions, but also for those requiring highly specialized consideration in their diets. It is also designed to serve as a reference guide for certain values, equivalents, and percentages which of necessity must be considered in the preparation of all diets. The manual has been prepared in the interest of standardization of diets in all military hospitals.

#### 2. Scope

The reference material and the compilation of diets in this manual have been designed to meet practically all possible requirements of station, regional, and general hospitals. Since dietary treatment for many diseases constitutes an important part of the therapy employed, the diets herein contained have been selected with due care from various sources. No attempt has been made to discuss diets in detail for all of the diseases, nor for the clinical considerations governing the selection of appropriate diets. For this, the reader is referred to standard texts on medicine.

#### 3. Prescribing and Ordering Diets

Whenever possible, diets should be limited to those contained in this manual. The physician has at his command an almost unlimited field of special diets, which may be invaluable supplements to therapy in the control of disease. Alterations of the proportionate values of protein, fat, carbohydrate, minerals, and vitamins provide for a wide application of the therapeutic value of diets. By the application of the simple procedures suggested below there should be no trouble in obtaining diets which will aid in the recovery of the patients. The diet prescription should be specific and complete, and should contain information as shown in the following:

*a.* HIGH CALORIC DIET. State number of calories desired.

*b.* HIGH CARBOHYDRATE, LOW FAT DIET. State

number of grams of carbohydrate and fat desired. Unless otherwise requested, the total calories will be approximately that of a normal diet.

*c.* LOW CALORIC. State total calories desired and when ratio of protein, carbohydrate, and fat is to be altered, state number of grams of each.

*d.* DIET IN TREATMENT OF DISEASES OF HEART AND KIDNEYS. State approximate total calories, the number of grams of protein and of carbohydrate desired, the amount of fluid permitted in each 24 hours, and whether salt is to be omitted, the quantity reduced, or to remain unchanged.

*e.* DIETS FOR DIABETIC PATIENTS. State total calories and number of grams of protein carbohydrate and fat desired. If special attention to fluid intake is required, state amount of liquids permitted.

*f.* HIGH VITAMIN DIET. When a special vitamin is desired, it should be so specified by name and approximate amount.

*g.* DIET HIGH IN CALORIC AND VITAMIN CONTENT. State total calories and specific vitamins desired.

*h.* PEPTIC ULCER DIET. Designate special diet, that is, bland diet with frequent feedings, modified Sippy diet, gelatine-milk-mixture diet, or modified Meulengracht diet.

*i.* DIETS FOR POST-OPERATIVE PATIENTS. State name of operation and day desired for the particular diet to be given, for instance, "appendectomy, 2d day diet," etc.

*j.* DIETS FOR DENTAL PATIENTS. State whether the diet should be liquid, soft, or full.

#### 4. Inspections

The duties of the medical officer go beyond diagnosing the patient's condition and prescribing the diet. The medical officer must be on the alert to detect errors and omissions, to see that prescriptions are properly filled, and in addition, inspect the food for palatability, appearance, and content.

#### 5. Definitions

Since there is frequently wide variation in the experience of personnel charged with hospital diet



and preparation, words, phrases, or definitions may be misunderstood. The following list of definitions and descriptions will help to avoid confusion or misunderstanding of some of the more common items of invalid diet. It may serve to suggest a few varieties in adapting army rations and supplementing them for the seriously sick.

*Albumen:* Most commonly signifies white of egg but may be used for any simple protein soluble in water or salt solutions and coagulated by heat.

*Albumenized milk:* Consists of 6 ounces of chilled whole milk to which have been added one or two whites of eggs that have been broken up by whipping with a fork. It will be necessary to strain the mixture through cheese-cloth to remove stringy parts. The egg whites are either stirred into the milk with a fork or shaken vigorously in the presence of cracked ice.

*Albumenized tea:* Iced tea to which one white of egg per cup has been added as in the preparation of albumenized milk.

*Beef juice:* Consists of the "juice" of meat, that is, of the fluid substance contained in the muscle fiber. This is prepared by subjecting the meat to strong pressure after slightly searing meat.

*Beef tea:* A clear liquid; an aqueous extract obtained by allowing the finely cut beef to stand for an hour in a small amount of cold water in a glass jar and then placing the jar in water below the boiling point for almost 2 hours. This liquid should never be heated above 130° F. as care must be taken not to coagulate the albumen. Although it serves to introduce a saline fluid into the body and stimulate the appetite, it possesses little other nutritive value.

*Bouillon:* A broth made from lean meat delicately seasoned and usually cleared.

*Bouillon cube:* A small cube of dried meat or chicken extracts and seasonings; used with water to make bouillon.

*Broth:* A fluid food, a thin soup in which meat and usually vegetables are boiled and macerated. Frequently it has little or no caloric value but does aid in stimulating the appetite.

*Calorie:* A heat unit and therefore a measure of energy content. In dietetics the large, or *kilogram calorie*, is used, meaning the amount of heat necessary to raise a thousand cubic centimeters of water 1° centigrade.

*Carbohydrates:* The chief source of energy for the

body. They fall into two main groups: (1) sugars, such as sucrose and glucose (= dextrose) and (2) starches. Since small variations in amount may make large differences in metabolic balance, it is often necessary to check the carbohydrate content of food very accurately.

*Coddle:* To cook slowly and gently just below the boiling point; eggs and fruit are coddled.

*Cheese:*

*Compounded cheese:* Is a blend of cheddar cheese and milk or milk products (as whey) usually accomplished with an emulsifying agent; sodium chloride and citrate are frequently added.

*Process cheese:* A cheddar cheese which has been ground, mixed with an emulsifying agent, and seasoned with salt to form a product which can be spread.

*Pot cheese:* Generally considered to be the same as cottage cheese, but the two may be differentiated by the fat content.

*Potted cream cheese:* Considered a synonym for cream cheese.

*Consomme:* A clear broth usually made from two or three kinds of meat highly seasoned and always served clear.

*Dietetics:* The application of the science of nutrition to the feeding of all individuals under differing circumstances of health and disease.

*Eggnog:* Well beaten egg in milk with sugar and flavoring added.

*Gelatin:* A purified protein formed by continued boiling from collagen, a substance present in the connective tissues and bones of animals.

*"Homogenized" foods:* Foods which have been subjected to a special process which renders them easily digestible by breaking the food cells, releasing the contained nutriment, and reducing the fibers to minute particles without removing bulk.

*Infusion:* The liquid extract obtained by steeping a substance, as coffee, herbs, etc., in a liquid.

*Junket tablet:* Small tablets containing rennin, a substance that coagulates milk. (Rennin is prepared commercially from the lining of a calf's stomach).

*Legumes:* Vegetables with large edible seeds, such as beans, peas, or peanuts.

*Metabolism:* The sum of all the processes going on within the body—especially those having to do with the building-up and breakdown of tissues and the utilization of energy-producing foods.



*Melba toast:* Thin sliced ( $\frac{1}{4}$  inch) bread toasted slowly until all moisture is removed.

*Milk toast:* Consists of cubes of toast served with hot milk or cream and butter and seasoning to taste.

*Mineral oil dressing:* Consists of one part of mineral oil and two parts of vinegar, beaten with a little ice, salt and pepper, then served at once after removing the ice.

*Nutrition:* May be defined as the sum of all physical and chemical reactions involved in the stimulation of growth and maintenance of proper body function.

*Peptonized milk:* The milk to which an enzyme has been added for the initiation of protein digestion. The peptonizing powder is dissolved in a gill of cold water in a quart sized glass jar. After a pint of milk has been added, it is thoroughly mixed. The jar is placed in a saucepan containing water at least to the level of the milk and at a temperature of  $115^{\circ}$  F. which is comfortably warm to the hands. This temperature is maintained for 5 to 10 minutes according to the degree of peptonization required. The jar is trans-

ferred to a pan of cold water and subsequently stored on ice.

*Protein:* A general name for an extremely complex group of chemicals rich in nitrogen. It is the most important basic type of food and is used in building and repairing of tissues. While most proteins are obtained from meat and meat products, many cereals, nuts, and legumes are also valuable sources.

*Purée:* A heavy, smooth, very thick liquid made by rubbing cooked foods through a sieve.

*Sherbet:* A frozen fruit juice mixture similar to an ice, with egg white, gelatin, or milk added to decrease the size of crystals. For milk sherbet milk is used in place of all or part of water.

*Soufflé:* A delicately spongy hot food dish made from a sweet or savory mixture as cheese, meat, fish, vegetable, fruit, or chocolate and made light by stiffly beaten egg whites.

*Vitamin:* One of a few specific substances needed by the body to control the utilization of other foods. While only very small amounts are needed, these are critical and lack of any one vitamin may lead to serious disease.



## NORMAL DIET

## Section I. NUTRITIONAL ELEMENTS

## 6. General

A normal diet should contain all the nutrients both in the amount and proportion to maintain full health and efficiency. Such a diet is termed *nutritionally adequate* and *well-balanced*. Accurate chemical analysis of many varieties of human food show that there are five basic kinds of nutritional elements, namely, (1) carbohydrates, (2) proteins, (3) fats, (4) minerals, and (5) vitamins. Each of these has its own physiological purposes, which are discussed below. While few foods consist of one element only, most combine several in varying proportions, and some, like beef liver or milk, may contain representatives of all five elements.

## 7. Carbohydrates

a. The body derives energy from carbohydrates, fats, and proteins. As the first is most abundant, it is usually considered the most important source. Energy values of foods are expressed in calories, the standard unit of potential heat production. *Carbohydrates and protein each have an approximate net caloric value of 4 per gram; fat, of 9 per gram (a gram is approximately  $\frac{1}{28}$  ounce).* Carbohydrates and fats are the most economical sources of energy, while protein is the poorest as well as the most expensive. Two great subdivisions of carbohydrates are sugars and starches. The former are available in the diet as sugar, syrups, fruit juices, etc., while the starches occur chiefly in flour, breadstuff, cereals, and potatoes. The energy requirement per man per day at hard work is about 4,500 calories. Under exceptional circumstances, such as severe exertion or intense cold, the caloric requirement may be greatly increased. (See tables 6 and 13 of the app.)

b. Highly purified or refined carbohydrates are less desirable than those in their natural occurring state since both minerals and vitamins have been ex-

tracted. Although great numbers of persons have come to prefer those less nutritious foods, education and tasty cooking are slowly correcting defective food habits. Those charged with responsibility for hospital diets should exercise discretion in selecting carbohydrate substitutes.

## 8. Proteins

Proteins are the main structural units of all body cells and are, therefore, the most important type of food. Chemically they are relatively enormous, chain molecules rich in nitrogen. Although many varieties of protein are known, for practical purposes in dietetics they are simply classed under the single general name. Protein is vital in the diet to replace that broken down in ordinary metabolism, and to build and repair muscle, nerve, blood, and all other tissues. Muscular work does not in itself result in destruction of cellular protein, unless there are insufficient carbohydrates and fat in the dietary. Animal proteins, generally, are of higher nutritional value than those derived from vegetables; a certain percent of animal protein, in fact, is necessary to supply all the material needed for the replacement of the proteins of the human body. Usual sources of protein are lean meats, fish and poultry, eggs, milk, and cheese. Those vegetable proteins of highest value are supplied by leaves, cereal grains and their products, nuts, beans, peas, and other legumes. For a man at light work the minimum requirement of protein is 1 gram per kilogram (2.2 lb.) of body weight per day. An army ration furnishing approximately 100 to 120 grams of proteins a day is usually ample, except in convalescence, when additional quantities may be needed to enable the patient to recoup losses incurred during surgery, illness, and inanition.

## 9. Fat

In addition to being a primary source of energy, and body heat, dietary fat is used to replace body fat used up during work periods and to furnish other constituents necessary for the normal functions of the body. Fat rich foods are: butter, cream, cheese,



lard and lard substitutes, vegetable oils and especially the fat of meats. Normal digestion of fat results in formation of glycerol and fatty acids in the intestine. Due to the close association of carbohydrate metabolism with that of fat, it is significant that diets deficient in carbohydrates will also unbalance the oxidation of fats and result in acidosis of the blood. For these, and other reasons, excess fats and greasy foods must be avoided where possible. Average utilization of fat by a soldier at medium activity is about 115 grams per day. Under Arctic conditions or in extreme cold troops have a great increase in their caloric requirement which is normally met by an increase in the fats of the diet.

## 10. Minerals

These are necessary for the proper maintenance and development of all body structures—especially denser ones such as bones, teeth, cartilage, and tendons. Muscle, nerve, and blood constituents are likewise dependent on specific minerals. Calcium, iron, and iodine are most likely to be deficient in inferior diets and should be replaced and maintained constantly in adequate amounts. Common salt is so essential that whenever profuse sweating occurs, additional amounts must be taken. Dietary minerals are obtained chiefly from the green leafy vegetables, fruits, meats, milk, cheese, and whole grain cereals. Milk, or its products, other than butter or cream, are the main source of calcium. Lean meats, liver, heart, and kidneys, as well as the yolk of eggs, are good sources of phosphorous and iron. Fruits and vegetables, in general, are valuable for their content of various minerals as well as vitamins. Iodine is contained in many foods produced in iodine-containing soil and in most sea foods. To assure an adequate intake of iodine, 0.01 percent of an iodide is frequently added to table salt. The daily requirement for calcium is about 0.8 gram (12 grains); for iron, about 16 milligrams ( $\frac{1}{4}$  grain). These requirements are abundantly met by the usual army ration. For common salt (sodium chloride), the daily requirement is at least 4 grams; a majority of men take more than this as a matter of taste. Diets of patients with severe fevers or tropical dysenteries must be carefully supervised as to salt content. Heat exhaustion is the result of loss of salt from excessive sweating. The amount of salt required by man at hard work in hot climates may increase to more than 15 grams ( $\frac{1}{2}$  ounce) a day.

## 11. Vitamins

These are a small but highly important group of substances needed to supplement other food elements,

and in the case of carbohydrate, even to control its utilization. A common dietetic error however, is to overemphasize vitamin factors at the expense of more basic ones. The discussion of them given in the next section is intended solely to clarify a complex and widely misunderstood subject.

## 12. Water and Bulk

No consideration of normal diet is complete without including water and bulk. While not classed as a food, water is, nevertheless, the most vital substance known. Living protoplasm contains from 60 to 95 percent water, therefore fluid in the diet must never be neglected. Thirst ordinarily regulates water intake at a satisfactory level. Normal requirements are between 2 and 3 quarts per day. Hot climates, heavy physical work, or disease may cause profuse sweating; which greatly increases the body need for water. Since under these conditions water and salt leave the system together, both must be supplied in abundance. Water requirements after severe hemorrhage or dysentery are prime medical considerations.

**a. WATER BALANCE.** In addition to water taken into the body in foods and beverages, small amounts are produced by chemical oxidation changes in digestion. Excretion of water through kidneys, lungs, skin, and intestine in general balances the intake. A typical example of daily water balance follows:

<i>Water intake</i>		<i>Excreted water</i>	
Beverage .....	1,200cc	Kidney output..	1,300cc
Food .....	1,000cc	Lungs .....	600cc
Oxidations ....	350cc	Perspiration ...	500cc
		Feces .....	150cc
Total .....	2,550cc	Total .....	2,550cc

**b. WATER PROVISION.** Provision of safe water is the responsibility of the Corps of Engineers, but every unit commander is responsible for the distribution and protection of treated water within his organizations as well as for its proper use by personnel. While the Medical Department inspects and tests all main water supplies, only superior individual troop discipline can insure protection against water-borne diseases. Chlorination in the Lyster bag is basic routine for medical units in the field.

**c. BULK.** Bulk in the diet is derived from cellulose in vegetable foods and fibrous connective tissue in meats. At times fat in the diet, when in excess of the body's ability to assimilate it, may also act as bulk. Bulk is essential in normal diet to distend muscles in the walls of the large intestine, and by exercise enable them to maintain tone. Continued



fluid diets without bulk inevitably lead to weakness of colon musculature and to chronic constipation. The usual army ration furnishes an abundance of bulk. However for patients with gastro-intestinal wounds or infections, fibrous diets must be either forbidden or gradually replaced only under close medical supervision. Low residue diets must be prepared for this type convalescent. For field troops emergency rations are sometimes lacking in the above substances; failure of daily bowel movement is not to be considered abnormal in men subsisting for several days on these rations.

### 13. Salt

Normal amounts of salt are adequately provided in ordinary foods, when the total water intake is less than 1 gallon per day. The salt intake should balance that lost through fluid excretion, because a deficit will result in serious disability. To compensate for abnormal loss through profuse sweating or dysentery additional amounts above normal levels may be needed. It is best taken in solution, using approximately  $\frac{1}{10}$  percent table salt in drinking water. This can be made up as follows:

- a. One pound table salt to 100 gallons of water.
- b. 0.3 of a pound salt to Lyster bag (36 gallons).
- c. One-fourth teaspoonful salt to each canteen of water.
- d. Two 10-grain salt tablets dissolved in every quart consumed.

Direct digestion of salt tablets is not recommended. Where necessity compels a decrease of available water per man, salt intake should be decreased proportionately.

## Section II. VITAMINS

### 14. General

Vitamins are specific chemical compounds present in many foods and are necessary for general health and the proper utilization of carbohydrates and, possibly, of fat. They have long been designated by letters of the alphabet, but now, as their actual chemical natures are being discovered, names indicative of their chemical composition are given. Each vitamin has a separate function in the body, and lack of any one may cause disability from actual disease as well as decreased utilization of the others. Even a moderate deficiency of certain vitamins results in lowered health, inefficiency, and possibly greater

liability to infection. *In special diets vitamin deficiency must be avoided.* Supplementary vitamin medication frequently is necessary. Whenever in doubt, always consult the medical officer in charge of the case.

### 15. Vitamin A

This vitamin is intimately concerned with the regeneration of visual purple in the retina of the eye and is required for normal vision in dim light or darkness. Lack of or a lowered intake of this vitamin is related to night blindness. This is of obvious military importance. More severe grades of deficiency of this vitamin produce changes in the skin and the lining membranes of the bronchial tubes, gastrointestinal, urinary, and genital tracts, and an opaque condition of the cornea of the eye. The vitamin is present in high concentration in the oils expressed from the livers of various fishes. It can be produced in the human body by splitting of a yellow pigment substance, carotene, present in the green leafy and yellow vegetables. Green and yellow vegetables, such as kale, collards, yellow squash, broccoli, carrots, lettuce, turnip greens, and yellow sweet potatoes are excellent vegetable sources of carotene, the precursor of vitamin A. Cream, butter, cheese, egg yolks, canned sardines and salmon, and the livers of animals are the best animal sources of pre-formed vitamin A. Fish liver oils contain tremendous amounts of vitamin A and are used when it is necessary to treat severe deficiency. The concentration of vitamin A in foods and the daily requirements are expressed in "international units": the unit is six ten-thousandths of a milligram of the pro-vitamin (Beta-carotene) as it occurs in vegetable sources. The recommended daily allowance is about 5,000 units.

### 16. Vitamin B<sub>1</sub> (Thiamin)

The chemical name of this vitamin is thiamin chloride-hydrochloride; it is usually referred to as "thiamin." It is, with others of the vitamin B complex, necessary for the derivation of energy from sugars and starch. Consequently when the diet contains large amounts of sugar and starchy food and an inadequate amount of this protective nutrient, disturbances of metabolism result. The first effect may be on the appetite; thereafter various nervous symptoms appear, including irritability, pain, loss of interest in important matters, forgetfulness, ready fatigue, and, finally, mental and physical inadequacy. Severe deficiency results in neuritis and the symptoms of heart failure, characteristically known as beri-beri. Good food sources of thiamin are lean



meats especially pork, liver of any sort, whole grain cereals, enriched flour and bread, peas, dried beans, peanuts, and many of the green vegetables. The recommended daily allowance is about 1.8 milligrams a day, or up to 4.0 milligrams when there is great activity. Dangerous loss of vitamin B<sub>1</sub> may occur in the preparation of food. Vitamin B<sub>1</sub> is soluble in water; hence, discarding the water in which foods are soaked or cooked results in an appreciable loss of the vitamin. Thiamin is destroyed by heat, especially in the presence of alkali. The losses from cooking meats (dependent, however, on the method involved) may be in the neighborhood of 50 percent, from cooking vegetables 20 percent, and when the water used in cooking is discarded, an additional 25 percent may be lost.

### 17. Vitamin B<sub>2</sub> (Riboflavin)

Like thiamin, this vitamin is required for the utilization of energy from sugars and starch, and is probably involved in the metabolism of fat. Deficiency is produced by a diet containing excessive amounts of purified carbohydrate foods, such as sugars, and highly milled, unenriched flour, and inadequate amounts of protective foods. Lack of riboflavin is likely to cause mouth irritation, magenta colored tongue and persistent soreness and cracking of the lips especially at the corners of the mouth; this latter condition is known as cheilosis. Vascularization of the cornea of the eye may occur and the eyes may become unduly sensitive to bright light with lacrimation and a feeling of roughness. Poor distant vision and inability to see distinctly in dim light are additional symptoms. Riboflavin is present in small amounts in many foods; the richest sources are liver, lean meat, eggs, milk, cheese, and green leafy vegetables. The recommended daily allowance is about 2.5 milligrams. Requirements increase with caloric expenditures, and also in hot tropical climates.

### 18. Niacin (Nicotinic Acid)

This vitamin of the B group like thiamin and riboflavin, is necessary for the intracellular conversion of the sugars and starches into energy. Mild deficiency of nicotinic acid may result in nervousness, mental depression, lack of mental stamina, forgetfulness, loss of appetite, and either diarrhea or constipation. Later there may be soreness and redness of the tongue and ulceration of the gums, which may be mistaken for trench mouth. Severe prolonged deficiency causes the disease called pellagra. Good sources of nicotinic acid are: lean meats of all kinds, liver, fish, whole grain cereals, enriched flour and

bread, and green leafy vegetables. The recommended daily allowance is variable with an average of about 20 milligrams. Requirements increase with caloric expenditure.

### 19. Vitamin C (Ascorbic Acid)

One of the outstanding functions of ascorbic acid is to maintain intercellular cementing substance; lack of this vitamin is usually first evidenced by undue fragility of the capillary blood vessels. Hence relatively minor injuries may produce large bruises. Severe deficiency causes the disease, scurvy, in which there are large hemorrhages into the skin, muscles, joint cavities, and between the bones and the membranes of their skinlike covering. The healing of wounds is markedly delayed, and reduced resistance to infection is likely. Ascorbic acid is present in large amounts in fresh citrus fruits, certain berries, tomatoes, cabbage, and other leafy green vegetables. Normal diet should contain an abundance of fresh fruits and vegetables to insure adequate amounts of this vitamin. Since it is easily destroyed by heat, no food containing ascorbic acid should be subjected to long boiling, nor should soda be added to greens to preserve the color during cooking. The recommended daily allowance is about 75 milligrams. As army rations at times may not supply this amount, special attention should be given to using foods rich in vitamin C, such as raw cabbage, peppers, tomatoes, leafy green vegetables, oranges, and pineapples. However unless proper cooking and service are ensured, placing such items on a menu has little value. Customary losses of this vitamin upon cooking are high—approximately one-third of the original content, except where the medium is acid, as in tomatoes and citrus fruits.

### 20. Vitamin D

Vitamin D is necessary for proper calcium and phosphorus metabolism, especially of bones and teeth. In normal adults, exposed to frequent sunshine, the vitamin D is produced in ample amounts by the action of ultraviolet rays on compounds contained in the fat underlying the skin. The best dietary sources are fish rich in body oil, such as salmon, sardines and herring. Other good sources are butter, cream, eggs, liver and irradiated evaporated or whole milk. Adult requirements vary with amount of sunshine or artificial ultraviolet irradiation received, but may be roughly estimated at 400-600 International or U.S.P. units. Dosages larger than 1,000 units are apt to be dangerous and should be given only under medical supervision.



## 21. Vitamin E

Requirements for this vitamin have not yet been proved for humans. Animal experimentation indicated that it is essential for embryonic development and maintenance of reproductive gland function. The term "antisterility" vitamin is inaccurate and should be avoided. From what is known, it appears that any normal diet containing leafy green vegetables, legumes, meat or milk products contains sufficient requirements.

## 22. Vitamin K

This substance is necessary for the formation of one of the factors important in the clotting of blood, namely prothrombin. When it is deficient, excessive and prolonged bleeding may occur from trivial wounds. It is unlikely that this vitamin could be

deficient in a dietary of natural foods. The green leafy vegetables, tomatoes, and hog livers are the best sources of vitamin K. Additional amounts needed are usually given in the form of tablets or injections.

## 23. Other Vitamins

Various other vitamins regarding which little is known are undoubtedly present in various foods. This is particularly true concerning the lesser known members of the B-complex. Among these may be listed pyridoxine, pantothenic acid, folic acid, and others whose properties and characteristics are as yet not determined. It is reasonable to expect that if the dietary consists largely of natural foods and is adequate with regard to the known vitamins, no evidence of deficiency from other vitamins will occur.



## REQUIRED AMOUNTS OF NUTRIENTS

## Section I. ADEQUACY AND BALANCE

## 24. Adequacy of a Diet

*a.* Estimates of requirements for human nutrients have been established by the National Research Council. This great and complex problem has not been fully solved however, because all the essentials required by the human body have not yet been identified and because exact minimal amounts cannot be determined for every person. Moreover an individual's needs vary during his lifetime and especially during any period he may be sick or disabled. Furthermore an individual's needs may be modified or conditioned by long training or necessity. In spite of this, it is fairly simple to gauge the probable adequacy of any diet. This is done by reference to standard published tables, set up by competent authorities in the field of nutrition. For army hospitals and all other types of military units the adequacy of a diet is obtained by comparison with daily recommended allowances prescribed by the National Research Council, as given in Table I. These are to be considered *minimal values* for all planning purposes, although they actually are a liberal allowance.

*b.* Recommended allowances will provide enough margin of safety above minimal requirements, so that good nutritional state and even storage of some nutrients will be favored. The margin of safety varies for different factors. Levels recommended refer to nutrients actually consumed, and do *not* allow for losses in cooking, or long storage. It is important therefore, when ordering unprocessed foods, that sufficient extra amounts be obtained to allow for cooking loss. Be especially alert to provide adequate thiamin (vitamin B<sub>1</sub>), riboflavin (vitamin B<sub>2</sub>) and ascorbic acid (vitamin C), which are water soluble and easily destroyed by heat.

*c.* It should be noted that the allowances are given for the 70 kilogram man and the 56 kilogram woman

at three levels of activity. Allowances for smaller or larger individuals will vary proportionately. Since values given in table I are for average normal persons, adjustments to special needs of the various diseases must be made. In febrile conditions, there is usually an increased need for calories, thiamin, and ascorbic acid. The need for nutrients is altered in many other diseases, as for example where abnormal absorption and excretion enter as complicating factors.

## 25. Balanced Diet

*a.* The body performs its functions best when the foods are consumed in the proper amounts, the total amount varying according to the type of work performed. Obviously a soldier in combat or at drill expends more energy than one performing clerical work at a desk. On the other hand, needs for special health-protecting foods and minerals, with the exception of the factors of the vitamin B complex, do not vary greatly with work output. During high levels of activity, the greater energy required may necessitate reduction in water-rich foods to permit the soldier to consume more energy-rich ones. Under some conditions, such as prolonged combat, there may be danger of insufficient health-protecting foods. All cases require a careful selection of foods to insure the proper intake of vitamins and minerals. The diet is said to be out of balance if it includes too much energy food and too little building and repairing food, or if it contains sufficient energy and building food but not enough health-protecting food. Good balance may be obtained by placing on the menu items from all the food groups listed in table III.

*b.* Balance refers to the selection of foods that produce an acceptable meal. Dietitians should not use the words "adequate" and "balanced" interchangeably. As the science of nutrition advances, it becomes more apparent that their meanings may be quite different. Thus a "balanced" diet, by reason of insufficient quantity, may be far from "adequate" nutritionally; conversely, a nutritionally adequate



diet may not be necessarily balanced, since there may be present excesses of certain nutrients, that is, the diet may be unbalanced, but yet adequate. If, moreover, the excess has a harmful effect upon the availability of the other nutritional components of the diet, then the unbalanced diet becomes, in turn, inadequate. (See table II.)

## 26. Use of Synthetic Vitamin Preparations

Normal diet has been defined as one which provides all nutrients essential for the maintenance of optimal health and efficiency. Wherever possible the nutrients required should be obtained from natural foods rather than synthetic preparations. This is true for

several reasons, chief among which may be listed the following:

a. Synthetic vitamin concentrates, tablets, and pills may not contain all of the known nutrients, either as such or in optimal proportion. Furthermore, they obviously may not contain lesser known or unknown nutrients which are, however, provided by natural foods.

b. The use of vitamins over and above the daily requirements—that is, “supercharging,” does not result in any improvement over the physical state attained on an adequate diet obtainable from natural foods.

c. The routine use of synthetic vitamin prepara-

Table I. Recommended dietary allowances<sup>1</sup>

(Data supplied by Food and Nutrition Board, National Research Council.)

	Calories	Protein grams	Calcium grams	Iron mg	Vitamin A <sup>3</sup> I.U.	Thiamin (B <sub>1</sub> ) mg <sup>2</sup>	Ribo- flavin mg	Niacin (nicotinic acid) mg	Ascorbic acid mg <sup>2</sup>	Vitamin D I.U. <sup>6</sup>
<b>Man (70 kg):</b>										
Sedentary.....	2,500	70	0.8	12	5,000	1.5	2.2	15	75	
Moderately active.....	3,000	70	0.8	12	5,000	1.8	2.7	18	75	
Very active.....	4,500	70	0.8	12	5,000	2.3	3.3	23	75	
<b>Woman (56 kg):</b>										
Sedentary.....	2,100	60	0.8	12	5,000	1.2	1.8	12	70	
Moderately active.....	2,500	60	0.8	12	5,000	1.5	2.2	15	70	
Very active.....	3,000	60	0.8	12	5,000	1.8	2.7	18	70	
<b>Pregnancy:</b>										
Latter half.....	2,500	85	1.5	15	6,000	1.8	2.5	18	100	400-800
Lactation.....	3,000	100	2.0	15	8,000	2.3	3.0	23	150	400-800
<b>Children up to 12 yrs:</b>										
Under 1 year <sup>4</sup> .....	100/kg	3-4/kg	1.0	6	1,500	0.4	0.6	4	30	400-800
1-3 years <sup>5</sup> .....	1,200	40	1.0	7	2,000	0.6	0.9	6	35	
4-6 years.....	1,600	50	1.0	8	2,500	0.8	1.2	8	50	
7-9 years.....	2,000	60	1.0	10	3,500	1.0	1.5	10	60	
10-12 years.....	2,500	70	1.2	12	4,500	1.2	1.8	12	75	
<b>Children over 12 yrs:</b>										
<b>Girls:</b>										
13-15 years.....	2,800	80	1.3	15	5,000	1.4	2.0	14	80	
16-20 years.....	2,400	75	1.0	15	5,000	1.2	1.8	12	80	
<b>Boys:</b>										
13-15 years.....	3,200	85	1.4	15	5,000	1.6	2.4	16	90	
16-20 years.....	3,800	100	1.4	15	6,000	2.0	3.0	20	100	

<sup>1</sup> Tentative goal toward which to aim in planning practical daily dietaries can be met by a good diet of natural foods. Such a diet will also provide other minerals and vitamins, the requirements for which are less well known. In the usual dietary of moderately active individuals, calories are furnished by fats, carbohydrates, and protein in the approximate percentages of 45, 40, and 15, respectively.

<sup>2</sup> One mg. thiamin equals 333 I.U.; 1 mg. ascorbic acid equals 20 I.U.

<sup>3</sup> Requirements may be less if provided as vitamin A; greater if provided chiefly as the pro-vitamin carotene.

<sup>4</sup> Needs of infants increase from month to month. The amounts given are for approximately 6-8 months. Amounts of protein and calcium needed are less if derived from human milk.

<sup>5</sup> Allowances are based on needs for the middle year in each group (as 2, 5, 8, etc.) and for moderate activity.

<sup>6</sup> Vitamin D is undoubtedly necessary for older children and adults. When not available from sunshine, it should be provided probably up to the minimum amounts recommended for infants.

Further recommendations, adopted 1942: The requirement for iodine is small; probably about 0.002 to 0.004 mg. a day for each kilogram of body weight. This amounts to about 0.15 to 0.30 milligram daily

for the adult. This need is easily met by the regular use of iodized salt; its use is especially important in adolescence and pregnancy.

The requirement for copper for adults is in the neighborhood of 1.0 to 2.0 milligrams a day. Infants and children require approximately 0.05 per kilogram of body weight. The requirement for copper is approximately one-tenth of that for iron.

The requirement for vitamin K is usually satisfied by any good diet. Special consideration needs to be given to newborn infants. Physicians commonly give vitamin K either to the mother before delivery or to the infant immediately after birth.

Probable conservative losses due to cooking may be as follows:

Thiamin: Deduct 40% of total value computed for the ration.

Riboflavin: Deduct 15% of total value computed for the ration.

Niacin: Deduct 20% of total value computed for the ration.

Ascorbic Acid: Deduct 35% of total value computed for the ration.

When the Expeditionary Force menu is used exclusively the conservative losses in preparation and cooking should be less, that is:

Thiamin: Deduct 20% of total value computed for the ration.

Riboflavin: Deduct 10% of total value computed for the ration.

Niacin: Deduct 10% of total value computed for the ration.

Ascorbic Acid: Deduct 10% of total value computed for the ration.



Table II. Recommended distribution of nutrients in a normal daily diet

(Quantities calculated before cooking)

(Allowances are those of the National Research Council. (See table I.)

Nutrients	Unit of measure	For moderate activity		Average for Army, May 1941 to April 1942	For very active troops	
		I <sup>1</sup>	II <sup>2</sup>		IV <sup>1</sup>	V <sup>2</sup>
	Calories	3,556.	3,468.	4,200.	4,808.	4,974.
Protein	Grams	107.8	106.4	128.	149.	150.4
Fat	Grams	168.3	167.6	192.	219.5	219.8
Carbohydrates	Grams	402.4	382.6	492.	552.4	590.6

<sup>1</sup> Columns I, IV — If the supply of fresh foods is unlimited.<sup>2</sup> Columns II, V — If the supply of fresh foods is limited.<sup>3</sup> Column III — Based on quantities of food prescribed for the Army during period May 1941 to April 1942.

Approximate distribution of calories in an average army daily diet for moderate activity:

Fats	45 percent
Carbohydrates	40 percent
Protein	15 percent

tions is most uneconomical. They should be used only for known deficiency cases or in pregnancy and lactation or in disease, when ordered by the medical officer.

## Section II. FOOD CLASSIFICATION

### 27. Need for Classification

Unless foods are classified according to some systematic plan, scientific care of the sick would be impossible. Any grouping is to a certain extent artificial, and, if followed too strictly, leads to absurdities. Based on nutritional similarities and on economic sources the tables below are intended to help the scientific planning of meals. While some authorities try to oversimplify natural food groupings, and others try to overelaborate them, this manual attempts to compromise for practical, common-sense efficiency ends. It uses 15 basic food groups, which are shown in table III. Further discussion will be found in paragraphs 29-41, inclusive.

### 28. How to Use Food Classification Tables

When the medical needs of patients are known, it is a daily necessity to plan their menus and to analyze the adequacy of the hospital ration. This is done by

comparing the planned menu, item by item, with the 15 basic food groups, to insure that each group, so far as practicable, is represented. To find the amounts of calories and of each nutrient component, it is necessary to check *each portion served* with table III and with the Tables of Food Composition (table 17 in the app.). Foods should always be analyzed *in the form in which eaten*, taking into account, accompanying substances like cream, butter and sugar, and possible cooking losses. Every menu must be analyzed and checked from the following standpoints:

- a. Medical needs of the patient.
- b. Adequacy.
- c. Balance and variety.
- d. Correct caloric content.
- e. Attractive appearance.
- f. Cleanliness.

No matter how difficult the field conditions or meager the supplies, it is the duty of those in charge of feeding patients, to serve the best possible meals, as judged from the six points above.

### 29. Recommended Normal Daily Allowances

After each paragraph heading below and in table III approximate daily quantities of each group are recommended. They represent average amounts for the well, active soldier on a liberal diet. Over a reasonable period of time, the average daily amounts eaten should approximate the levels given. Other quantities would be satisfactory, or a class might be entirely omitted when necessary, provided proper adjustments were made in the quantities of other food classes containing the nutrients concerned. For invalids adjustment in quantities must be made to fit the individual case,



Table III. *Basic food groups*  
Amounts recommended for different levels of activity

(Quantities expressed in grams, ounces, and pounds per man per day.)

Food groups	Moderate activity						Average for Army						Very active troops					
	Column 1 <sup>1</sup>			Column 2 <sup>2</sup>			Column 3 <sup>3</sup>			Column 4 <sup>1</sup>			Column 5 <sup>3</sup>					
	Grams	Ounces	Pounds	Grams	Ounces	Pounds	Grams	Ounces	Pounds	Grams	Ounces	Pounds	Grams	Ounces	Pounds	Grams	Ounces	Pounds
1. Meats.....	340	12	0.75	340	12	0.75	318	13½	0.85	454	16	1.00	454	16	1.00	454	16	1.00
2. Eggs.....	57	2	.12	57	2	.12	70	2½	.16	57	2	.12	57	2	.12	57	2	.12
3. Milk (fluid equivalent).....	454	16	1.00	454	16	1.00	482	17	1.06	454	16	1.00	454	16	1.00	454	16	1.00
4. Butter.....	42	1½	.10	42	1½	.10	42	1½	.10	57	2	.13	57	2	.13	57	2	.13
5. Other fats.....	28	1	.06	28	1	.06	37	1½	.08	35	1¼	.07	35	1¼	.07	35	1¼	.07
6. Sugar and syrups.....	113	4	.25	113	4	.25	144	5½	.32	113	4	.25	151	5½	.33	151	5½	.33
7. Grain products, cereals.....	227	8	.50	227	8	.50	315	11½	.70	396	14	.88	406	14½	.90	406	14½	.90
8. Legumes, including peanut butter.....	14	½	.03	14	½	.03	28	1	.06	42	1½	.10	57	2	.12	57	2	.12
9. Vegetables, L.G.Y.....	198	7	.44	151	5½	.33	196	7	.43	198	7	.44	151	5½	.33	151	5½	.33
10. Tomatoes.....	92	3¼	.20	85	3	.18	67	2½	.15	60	2½	.14	61	2½	.16	61	2½	.16
11. Citrus fruits.....	52	1¾	.11	42	1½	.10	90	3½	.20	28	1	.06	42	1½	.09	42	1½	.09
12. Potatoes.....	227	8	.50	315	11½	.70	304	10¾	.68	406	14½	.90	454	16	1.00	454	16	1.00
13. Vegetables, other than L.G.Y.....	227	8	.50	113	4	.25	130	4½	.29	227	8	.50	113	4	.25	113	4	.25
14. Fruits, other than citrus, fresh and canned.....	227	8	.50	92	3¼	.20	163	5½	.37	137	4¾	.30	113	4	.25	113	4	.25
15. Fruits, dried.....	24	¾	.05	24	¾	.05	151	5½	.03	42	1½	.10	42	1½	.10	42	1½	.10

<sup>1</sup> Columns 1 and 4—If the supply of fresh foods is unlimited.

<sup>2</sup> Columns 2 and 5—If the supply of fresh foods is limited.

<sup>3</sup> Column 3—Pertains to quantities of food prescribed for the Army during period May 1941 to April 1942.



### 30. Meats, Poultry, and Fish (12 ounces)

These supply good protein and are valuable sources of iron, phosphorus, and other minerals, and of thiamin (vitamin B<sub>1</sub>) and nicotinic acid, (niacin). Liver, kidney, and heart are richer in iron and the B vitamins than muscle meat and should be used frequently. Dietitians must remember that in cooking or canning meat, there is considerable destruction of the B vitamins, possibly 50 percent in the case of the more labile components. For variety use fish, that is fresh, dried, salted, or canned. If meats, fish, or poultry are not available, serve eggs, cheese, beans, or peas.

### 31. Eggs (2 eggs or 1.0-ounce dried whole egg)

Eggs are rich in complete protein, iron, vitamin A, and riboflavin, and they are, in addition, valuable because of their uses in the preparation of many attractive dishes. If fresh eggs are not available, use dried, whole eggs.

### 32. Milk, (fluid equivalent of 1 pint)

a. Milk contains the best combination nutrient substances. It is very difficult to construct a diet adequate in calcium and riboflavin without some form of milk and cheese. Raw milk should never be used, but should be pasteurized by either the "flash" or the "hold" method. If doubt exists as to proper handling, all fluid milk should be brought to a boil before using.

b. MILK PRODUCTS. Canned evaporated milk is sterile and, when diluted with an equal quantity of water, has approximately the same nutritive value as bottled milk. Safe water must be used to dilute evaporated milk for drinking. Dried skim milk contains the major nutrients of fluid milk, exclusive of the butter fat. Cheese may be counted as part of the milk allowance. It contains much of the protein and calcium of milk and certain of the vitamins. If milk is not available, adequate supply of calcium should be assured by increasing the consumption of cheese, green leafy vegetables, and beans. In rare cases plain calcium (lime) salts may be used.

c. CREAM SOUPS. These are particularly desirable because of the added milk and because they may be easily made of almost any vegetable.

d. EVALUATION. In evaluating dietaries, it is usual to calculate milk products as fluid-milk equivalent, obtained by converting evaporated milk, dried milk, and cheese to a common basis. To calculate this, multiply the weight in pounds of evaporated milk by 2, dried milk by 8, American or Cheddar cheese by 7, cottage cheese by 5.65, and gallons of ice cream by 3.75.

### 33. Fats (2.5-ounces)

For convenience in analyzing diets, table III divides this group into two parts: (1) butter, including spreads and (2) other fats including lard and salad dressings. All are concentrated sources of energy. Butter produced when cows are eating fresh green food, commonly called summer butter, is an excellent source of vitamin A. If good butter is not available, a substitute, fortified with vitamin A, is acceptable. Otherwise, any edible fat or oil may be used to provide energy, but then it is essential to secure leafy green or yellow vegetables, glandular meats, or whole milk in quantities sufficient to meet the requirements for vitamin A.

### 34. Sugar and Syrups (4-ounces)

Pure sugars do not contribute anything but energy. Heavily sweetened foods should be taken only at the end of a meal, otherwise they dull the appetite for more nutritious foods. Crude sugars, such as molasses and sorghum, supply some minerals as well as energy, and are therefore, more valuable nutritionally. Syrups, jams, and preserves, because of their high sugar content, also are classed as sugars. A common dietary error is to supply too much for inactive persons.

### 35. Cereals and Grain Products (8-ounces)

Cereals and breads are highly important as sources of energy and vegetable protein, and may be consumed in any quantity to satisfy the appetite, provided other nutritional requirements are met first and provided calories are kept within normal limits. The less refined the cereal, the higher its mineral and vitamin content. Whole grain products (such as rolled oats, cracked wheat, whole wheat, rye, and corn meal) are among the best sources of thiamin, while ordinary white bread may contain very little. Whole grain products are not so essential if the diet contains an abundance of vegetables, fruits, milk, and meat, or reasonable quantities of bread made from enriched flour. Unfortunately ordinary white flour is used in preference to whole wheat because of its better keeping qualities and acceptability. Although less desirable nutritionally than whole wheat, it is much improved by enrichment with thiamin, riboflavin, nicotinic acid, and iron.

### 36. Legumes (0.5 ounce)

Dried beans and similar legumes contain protein, a moderate amount of calcium, and thiamin. These may be used as a main dish several times a week. It is not necessary to use the quantity mentioned each day. They can be used in larger quantities at irreg-



ular intervals. Because of tough outer skins legumes may sometimes cause indigestion, which can be avoided by rubbing the cooked beans and peas through a sieve.

### 37. Leafy Green or Yellow Vegetables (7-ounces)

These vegetables are extremely valuable for their minerals (particularly iron and calcium), vitamins (especially carotene or pro-vitamin A and vitamin C), and their bulk. If there is no danger of typhoid fever, cholera, or dysentery, vegetables and fruit may be eaten raw. Uncooked cabbage and carrots of the "leafy green or yellow vegetable" class and turnips and onions of the "other vegetable" class are usually available and are excellent in salads, for their additional ascorbic acid (vitamin C).

Fresh vegetables should be cooked in a minimum amount of water and *only long enough to soften the fiber*, and served as soon as they are done. Vitamin and mineral loss can be further prevented when vegetables are steamed. It is also preferable to cook vegetables with their skins on. Soda should not be added since it accelerates destruction of ascorbic acid. Juices drawn out in cooking or water added in cooking will contain valuable nutrients and should not be discarded. Properly canned vegetables are about the equivalent, nutritionally, to freshly cooked vegetables. In this case, also, the liquid should be used. The difficulty that most persons do not like vegetables "sloppy" with water can be avoided by reducing the cooking fluid, serving in adequate dishes, or draining the juices to use as soup.

### 38. Tomatoes and Citrus Fruits (5-ounces)

This grouping has been found useful by many food authorities. Tomatoes and citrus fruits are alike in their high ascorbic acid content, and should be eaten every day. Furthermore they are equally valuable fresh, or canned, and in juice form may readily be substituted for one another. Because of acid character, the ascorbic acid content is preserved. For this vitamin, oranges are preferable followed by lemons, grapefruit, limes, and tomatoes in decreasing order. But for vitamin A, fresh, not canned, tomatoes and

whole oranges are excellent, while the others are poor.

### 39. Potatoes (8-ounces)

Potatoes are of great value because they are widely available, inexpensive, and can be eaten day after day. In the quantities usually eaten, they supply thiamin, nicotinic acid, and ascorbic acid. If potatoes are not used, increase the intake of other vegetables. Over 500 ways are known to cook this lowly edible root. At least 10 of them should be used frequently.

### 40. Vegetables Other Than Leafy Green or Yellow (8-ounces)

Some examples of this group are beets, celery, cauliflower, and corn. They add to the vitamin and mineral content of the diet, provide bulk, and are very useful to give variety and taste to nearly all menus.

### 41. Fruits, Other Than Citrus (canned and fresh, 8-ounces)

In general these have roughly the same nutritive value as root vegetables. Berries of all kinds, cherries, peaches, and pears add to the vitamin and mineral content of the diet. Their main value is to furnish cellulose fiber bulk. If fresh fruits and vegetables are not available, properly canned or dried fruits may be substituted. For convenience they are shown in table III as a separate class. Dried prunes, apricots, peaches, apples, raisins, and dates may be used, but they will have lost some of their vitamins in drying. Here good cooking is necessary to make otherwise uninteresting foods attractive to the patient.

### 42. Beverages (coffee, tea, and cocoa)

Beverages possess little nutritive value in themselves, except for the small amount of milk in cocoa. However they are always necessary to provide fluid, and frequently as a warming stimulant. Field mess equipment for medical units usually does not contain sufficient cups for all beverages with the meal. Since water with and between meals is so exceptionally important for health, responsible officers must either improvise or issue specific orders to provide a liberal water supply for patients.

## PLANNING MEALS

**43. General**

*a.* The objective in planning meals is to obtain a combination of foods that will satisfy the food habits and desires of the majority eating and at the same time furnish an adequate diet even though the number of foods available may be relatively limited. Monotony in menus and the weekly periodic repetition of the same menus result in dissatisfaction even with the most interesting foods. Numerous factors influence appetite, especially the weather and the amount of exercise. Use periods of increased appetite to encourage the consumption of foods that are needed but are not particularly relished. Study the food habits of the patients eating in the mess halls and wards as an aid in planning menus. The likes and dislikes of the patient must be taken into consideration as well as the adequacy of the diet. In planning special diets, each menu should be checked for palatability as well as accuracy and should conform to the regular diet pattern wherever possible.

*b.* It is essential to obtain variety and interest in meals. The dietitian or, when no dietitian is assigned, the officer in charge must consider such factors as the mess personnel, the types of equipment, the food supply, and the methods of food preparation in planning nutritionally adequate menus for hospital patients. Menu forms may aid in menu planning. Particular attention should also be given to the proper service of food.

**44. Personnel**

It is important that the menus be planned with a knowledge of the ability of the personnel to carry out instructions. For untrained employees, the menu should be kept simple in detail, using foods that do not require special skill in preparation. Adequate instruction, such as at a cooks' and bakers' school, should be provided immediately.

**45. Equipment**

The person planning the menus must keep in mind the equipment available in the mess for the prepara-

tion and service of food. Most equipment used in hospital messes is listed in the Medical Supply Catalog and issued to the messes from Medical Supply under proper requisition. Capacity of all equipment, the size of storerooms, and refrigeration facilities are also factors that must be considered. As mobile units have much less equipment, menus must be adapted for field service conditions.

**46. Food Supply**

*a.* All army hospital messes in the zone of interior are supplied with food to a great extent through the quartermaster. This makes it necessary for the person who is planning menus to become acquainted with the organization and supply system of the quartermaster commissary. When possible, the quartermaster takes into account the seasonable foods available and anticipates the need for the holiday seasons. The climate must also be considered in choice of foods on the menus, especially during the summer months when refrigeration facilities may be overtaxed. Foods in season should be used whenever possible. Certain foods that cannot be obtained through the quartermaster may be purchased with the hospital subsistence funds from outside firms in accordance with existing War Department regulations.

*b.* For hospital units outside the zone of interior, the oversea hospital ration is followed and the officer in charge should become familiar with the types of food issued as outlined in chapter 14, Oversea Hospital Food Allowances.

**47. Variety**

It is important that all trays present an inviting appearance, particularly the trays served to the ward patients. Contrasting colors and attractive arrangements of food play a large part in a successful meal. Foods all alike in color should not be served together. Variety may be introduced by contrast of color, texture, flavor, garnishes, and by different methods of food preparation. The texture of food is varied by using both soft and solid foods within the individual meal.



#### 48. Preparation

a. The menu should be planned so as to facilitate ease of food preparation and service as well as to conserve the nutrients and insure palatability of food. It is important that the combination of foods on the menu be such that the preparation involved may conform to the hours of serving both in ward kitchens and mess halls. Whenever possible in the mess halls, food should be prepared during the serving period. The menu as later interpreted on the cooks' work sheet should allow for a chronological system of food preparation, the desserts being made ahead of time, and the meats in accordance with the varied method of preparation. Vegetables and beverages should be prepared as near as possible to the serving period.

b. Standardized recipes should be supplied at all times to the cooks in the mess as a means of improving food standards and controlling food costs. Reference is made to TM 10-412, and TM 10-405.

#### 49. How to Plan a Menu

a. A menu planning form such as outlined below will be found indispensable. Weekly menus can easily be checked to avoid repetition of food and provide variety and adequacy for the period concerned.

#### MENU PLANNING FORM

##### Breakfast:

Fruit.  
Cereal.  
Eggs or meat.  
Toast.  
Butter.  
Beverage (with sugar and cream, if permitted).

##### Dinner:

Soup.  
Meat.  
Potatoes or substitute.  
Vegetable<sup>1</sup>.  
Salad, if desired<sup>1</sup>.  
Bread.  
Butter.  
Dessert.  
Beverage<sup>2</sup>.

##### Supper:

Meat or meat substitute.  
Potatoes or substitute.  
Vegetable or salad<sup>1</sup>.  
Bread.

Butter.  
Dessert.  
Beverage<sup>2</sup>.

<sup>1</sup> Leafy green or yellow vegetable should be served at least once a day.

<sup>2</sup> Milk or milk beverage should be served once a day.

b. To use the menu planning form, table III, which gives the 15 basic food groups, should be consulted frequently. It is also important that vegetables and salads be varied in as many ways as possible to stimulate the patient's interest in these vital foods. The chart of menu planning suggestions for vegetables outlined below will be of great value. Recipes for these items and additional menu suggestions for meats, meat substitutes, fruits, fruit salads, desserts, and beverages will be found in TM 10-412.

#### MENU PLANNING SUGGESTIONS FOR VEGETABLES

##### Hot foods

##### Cold foods

##### a. Legumes.

##### Beans, issue

Baked and bacon  
Baked and ham  
Baked and tomatoes  
Boston baked  
Simmered

##### Beans, kidney

Cheese bean roast	With hard boiled egg
Chili	salad
Simmered	With pickle, onion, and
Spanish Style	celery salad

##### b. Potatoes.

##### Potatoes, Irish

Au gratin	Chips
Au gratin with curry	Potato salad
Baked	
Baked in milk	
Buttered	
Creamed	
Franconia	
French baked	
French fried	
Hot potato salad	
In jackets	
Hashed brown	
Lyonnais	
Mashed	

*Hot foods*

O'Brien  
Parsley  
Plain fried  
Puff  
Scalloped

*Cold foods**Potatoes, sweet*

Baked  
Baked and apples  
Baked and pineapple  
Baked with apples and marshmallows  
Brown  
Candied  
Fried  
Glazed  
Mashed

*c. Leafy green or yellow vegetables.**Artichoke*

Buttered                      Artichoke heart salad

*Asparagus*

And cheese sauce              Asparagus tip salad  
Buttered                      with pimienta  
Creamed  
Scalloped  
With Hollandaise sauce

*Beans, string or wax*

And bacon                      Cooked vegetable salad  
And tomatoes                  Jellied vegetable and  
Buttered                      egg salad  
Creamed                      Marinated  
Creamed and celery  
Creamed and mushrooms  
Lyonnaisé  
Savory

*Beet Greens*

Buttered  
Buttered with hard cooked  
egg slices  
With vinegar

*Broccoli*

Au gratin  
Buttered  
With Hollandaise sauce

*Brussels Sprouts*

Buttered  
With Hollandaise sauce

*Hot foods*

Au gratin  
And bacon  
And chipped beef  
Buttered  
Creamed  
Hot slaw

Buttered sliced  
Buttered strips  
Creamed  
Glazed  
Lyonnaisé  
Sweet and sour

Buttered  
With vinegar

Wilted

Buttered  
With ham  
With vinegar

Broiled  
Buttered

*Cold foods**Cabbage, green*

And peanut salad  
Chopped raw vegetable  
slaw  
Cole slaw with bacon  
Lettuce and mixed  
green salad  
Old fashioned cole slaw  
With apple and pineapple  
salad  
With apple and raisin  
salad

*Carrots*

And other vegetable  
salad  
Chopped raw vegetable  
slaw  
Cooked vegetable salad  
Grated salad with raisin  
Jellied vegetable and  
egg salad  
Strips with celery  
Strips with olives  
Strips with radishes  
With cucumber and  
onion salad

*Endive*

Green salad

*Kale**Lettuce*

And tomato salad  
Crisp garden salad  
Green salad  
Head lettuce slices  
Mixed green salad  
Shredded and tomato  
salad

*Mustard greens**Mushrooms*



*Hot foods*

Creamed  
Fried

*Cold foods**Romaine*

Lettuce and mixed green  
salad  
Green salad

*Peas, green*

Baked  
Buttered  
Buttered with carrots  
Creamed

Cooked vegetable salad

*Peppers, green*

Stuffed with corn  
Stuffed with macaroni  
Stuffed with rice

And other vegetable salad  
Lettuce and mixed green  
salad  
Rings with cabbage slaw  
Rings with sliced tomato  
With cucumber and  
onion salad

*Spinach*

Buttered  
Buttered with hard  
cooked egg  
Creamed  
With vinegar

Mixed green salad

*Squash*

Hubbard, baked  
Hubbard, mashed  
Summer, buttered  
Summer, creole  
Summer, fried

*Tomatoes, canned or fresh*

Baked stuffed  
Broiled  
Fried green tomatoes  
Grilled  
Scalloped  
Stewed  
Stewed with celery  
Stewed with corn  
Stewed with onions

Jellied tomato salad  
Sections with cucumber,  
onion and other vege-  
table salad  
Sections on lettuce  
Sliced on lettuce  
Stuffed  
Tomato aspic salad

*d. Vegetables (other than leafy green and yellow).**Beets*

Buttered  
Diced and bacon

And horseradish relish  
Cold spiced

*Hot foods*

Harvard  
Hot spiced

*Cold foods*

Cooked vegetable salad  
Pickled  
Stuffed beet salad  
With string beans and  
pea salad

*Cauliflower*

Au gratin  
Buttered  
Creamed  
With brown crumbs  
With Hollandaise sauce

And other vegetable salad  
Cooked vegetable salad  
With cucumber and  
onion

*Celery*

Braised  
Buttered  
Creamed  
Stewed with tomatoes

Club salad  
Crisp garden salad  
Hearts and olives  
Hearts and radishes  
Hearts and raw carrots  
Jellied vegetable and  
egg salad  
Lettuce and mixed green  
salad  
With cucumber, onion,  
and other vegetable  
salad

*Celery cabbage*

Buttered  
Creamed  
Stewed with tomatoes

Lettuce and mixed green  
salad  
Sliced with green peppers

*Corn*

A La Southern  
And kidney beans  
Buttered  
Buttered with green pepper  
Creamed  
Fritters  
On cob  
Pilaff  
Pudding  
Sauteed  
Scalloped  
Succotash

Cooked vegetable salad

*Cucumbers*

And onion salad  
Chopped raw vegetable  
salad  
Mixed green salad  
Sliced in vinegar

*Hot foods**Cold foods**Hot foods**Cold foods**Eggplant*

French fried  
Fried  
Scalloped  
Scalloped with tomatoes

With cucumber, onion  
and other vegetable  
salad  
With olives

*Onions*

Au gratin  
Baked  
Buttered  
Buttered and tomatoes  
Creamed  
French fried  
Fried  
Glazed  
Savory  
Scalloped

Green salad  
Green onion in crisp  
garden salad  
Lettuce and mixed green  
salad  
With cucumber and other  
vegetable salad

*Parsnips*

Browned  
Buttered  
Fried  
Savory creamed

*Sauerkraut*

Hot

*Radishes*

Chopped raw vegetable  
slaw  
Crisp garden salad  
With carrot strips  
With celery hearts

*Turnips*

Boiled with salt pork  
Buttered  
Mashed

*Watercress*

Green salad

**50. Meal Service**

a. Special attention must also be given to the proper service of food. If the meal is not attractively served, the patient will not eat the food. As a result, he may not receive the nutritionally adequate diet planned for him. It also is essential that food waste be kept to a minimum.

b. Hot foods should be served steaming hot and cold foods very cold. This may stimulate the consumption of vegetables and salads which are often left uneaten on the tray. Full use should be made of steam tables, lids, individual serving dishes, plate covers, and available refrigeration facilities. Spot check timing should be made of the interval between when hot food is placed on trays and when it is actually eaten. Intervals great enough to allow chilling call for revised mess procedure.

c. Garnishing of food is usually appealing to the eye and the attractiveness of a plate is dependent upon the size of the serving as well as the color combination,



## DIETARY TREATMENTS IN DISEASE

## Section I. GENERAL HOSPITAL DIETS

## 51. General

In previous chapters on normal diets the influences of different diseases were not considered. In the following chapters, it is the purpose of this manual to present special disease requirements commonly met with in military hospitals. To aid the dietitian, in each case, a *food selection list* is presented along with a *sample weekly menu*. These food selection lists also include (suggested) foods to avoid. It should be remembered that therapeutic diets are merely modifications, great or small, of normal requirements. For these hospital diets the aim is to have them meet the following standards:

a. Adequacy for normal nutritional requirements *plus* the special demands exacted by the respective diseases.

b. Suitability for patient's needs as to consistency, palatability, and appearance.

c. Possibility of supply from amplified quartermaster stores. For field conditions see chapter 14, which shows to what extent basic supplies might necessarily limit the variety recommended here.

## 52. Liquid, Soft, Light, and Regular Diets

Under the medical officer's direction, these diets are of the greatest importance, especially in post-operative surgery. Details must be scrupulously carried out. Too much emphasis cannot be given the fact that a small error in diet for the very sick may be a matter of life and death. Diets will be varied in consistency according to the patient's ability to ingest them and according to the modifying influences of disease or surgery. Accepted terminology for the various consistencies of diet is as follows:

a. Liquid.

b. Soft.

c. Light.

d. Regular.

More highly specialized types, that is, bland, modified Sippy, gelatin-milk mixture, modified Meulengracht diet, anticonstipation diets, etc., are presented in following sections that deal with the respective disease conditions.

## 53. Liquid Diet

**Liquid** diets are composed of fluids that are either liquid when taken into the mouth or become liquid before reaching the stomach. These foods afford little residue or indigestible material. They must be easily digested, in concentrated form, and free from irritating condiments and mechanical irritants. Such diets should be given in small portions, 60–400 cc, depending on the patient's condition. Barring contraindications, the feedings should be repeated every 2 hours. At least six to eight feedings are required daily. The caloric intake in this type of diet may vary greatly. It is often desirable to have the patient take considerably more calories than the basal requirements. Fortunately it is not difficult to prepare liquid diets which contain as much as 2,000 or more calories. Two formulas for tube feeding are given below. The first of these may be used where forced feeding is necessary. Formula No. 2 may be also so used, but being more palatable, has more application in voluntary feeding.

## TUBE FEEDING FORMULA NO. 1

## Formula:

Milk .....	1,000 grams
Egg yolks .....	4 each
Evaporated milk .....	120 grams
Karo syrup .....	200 grams
Brewers yeast .....	24 grams
Tomato juice .....	120 grams
Cod liver oil .....	16 grams
Hot water .....	200 grams

**Analysis:**

Calories .....	2,066
Carbohydrates .....	210.8 grams
Protein .....	58.4 grams
Fat .....	87.2 grams
Vitamin A .....	9,856 units
Vitamin B .....	1,493.8 units
Vitamin C .....	725.0 units
Vitamin D .....	920.0 units
Riboflavin .....	1,163.0 units
Calcium .....	1.816 grams
Phosphorus .....	1.592 grams
Iron .....	8.48 mgms

**Method:**

Dissolve the yeast in the hot water. Mix with milk, egg yolks, evaporated milk, and Karo syrup, and cook in a double boiler. Cool, strain, and add tomato juice and cod liver oil.

**TUBE FEEDING FORMULA NO. 2****Formula:**

Eggs .....	2 each
Malted milk .....	60 cc
Butter .....	15 grams
Sugar .....	60 grams
Salt .....	2 grams
Cream .....	100 cc
Milk .....	500 cc
Water .....	300 cc
Orange juice .....	30 cc

**Analysis:**

Calories .....	1,476
Carbohydrates .....	145.7 grams
Protein .....	39.5 grams
Fats .....	75.4 grams
Calcium .....	.954 grams
Phosphorus .....	.970 grams
Iron .....	5.45 mgms
Vitamin A .....	3,512-3,617 units
Vitamin B .....	247-250 units
Vitamin C .....	14-15 units
Vitamin D .....	24-181 units
Riboflavin .....	329 units

**Method:**

Beat the eggs, add the melted butter, sugar, salt, and malted milk. Add the remaining ingredients in order, and strain. Give twice daily.

**LIQUID DIET, FOOD SELECTION**

Food	Permitted	Avoid
Beverage .....	Coffee or substitutes, tea, milk, butter-milk, cocoa, chocolate milk, malted milk, strained vegetable juices, eggnog, albumenized drinks, carbonated beverages, strained fruit juices, beef juice.	All others.
Cereals .....	Any cereal waters or gruels.	All others.
Desserts .....	Plain gelatin desserts, ice cream, sherberts, and ices, junket, boiled custard.	All listed desserts that contain pieces of fruit or nuts.
Soups .....	Clear broth, bouillon, strained cream soups, strained vegetable soup except those with dried beans and split peas.	All others.

**Sample weekly menu, liquid diet**

Breakfast	Dinner	Supper
<i>First day</i>		
Strained orange juice.	Beef broth.	Strained cream of carrot soup.
Cereal gruel.	Fruit ice.	Boiled custard.
Choice of beverage.	Choice of beverage.	Choice of beverage.
10:00 AM: Malted milk.	2:00 PM: Strained grapefruit juice.	8:00 PM: Pear nectar.
<i>Second day</i>		
Pineapple juice.	Strained vegetable soup.	Strained cream celery soup.
Cereal gruel.	Plain flavored gelatin.	Ice cream.
Choice of beverage.	Choice of beverage.	Choice of beverage.
10:00 AM: Egg-nog.	2:00 PM: Grape juice.	8:00 PM: Strained orange juice.
<i>Third day</i>		
Strained grapefruit juice.	Broth.	Strained cream mushroom soup.
Cereal gruel.	Junket.	Boiled custard.
Choice of beverage.	Choice of beverage.	Choice of beverage.
10:00 AM: Chocolate milk.	2:00 PM: Tomato juice.	8:00 PM: Pineapple juice.



## Sample weekly menu, liquid diet—Continued

Breakfast	Dinner	Supper
<i>Fourth day</i>		
Strained mixed fruit juice. Cereal gruel. Choice of beverage. 10:00 AM: Strained orange juice.	Strained Berkshire soup. Ice cream. Choice of beverage. 2:00 PM: Chocolate malted milk.	Strained cream asparagus soup. Plain flavored gelatin. Choice of beverage. 8:00 PM: Strained grapefruit juice.
<i>Fifth day</i>		
Grape juice. Cereal gruel. 10:00 AM: Tomato juice.	Chicken broth. Chocolate junket. 2:00 PM: Eggnog.	Strained cream of lima bean soup. Lemon sherbet. 8:00 PM: Pineapple juice.
<i>Sixth day</i>		
Strained orange juice. Cereal gruel. Choice of beverage. 10:00 AM: Strained grapefruit juice.	Strained essence of tomato soup. Ice cream. Choice of beverage. 2:00 PM: Grape juice.	Strained cream of celery soup. Gelatin. Choice of beverage. 8:00 PM: Malted milk.
<i>Seventh day</i>		
Strained grapefruit juice. Cereal gruel. Choice of beverage. 10:00 AM: Eggnog.	Strained Hunting-ton soup. Boiled custard. Choice of beverage. 2:00 PM: Pineapple juice.	Strained cream vegetable soup. Junket. Choice of beverage. 8:00 PM: Strained orange juice.

## SOFT DIET, FOOD SELECTION

Food	Permitted	Avoid
Beverage .....	As for liquid diets. Fruit and vegetable juices need not be strained.	
Bread .....	Toasted white bread or rolls, crackers.	All breads or crackers with bran.
Cereals and cereal products.	Cooked cereals, prepared cereals, spaghetti, macaroni, and noodles.	All cereals containing bran.
Cheese .....	Cream and cottage...	All others.
Dessert .....	Cornstarch, rice, and tapioca puddings, plain gelatin, custard, sponge cake, simple wafers.	
Eggs .....	Boiled, poached, or soft scrambled.	Fried in any form.
Fats .....	Butter and cream as desired.	
Fruit .....	Canned, stewed, or evaporated fruits, oranges	Pineapples, berries, and figs.
Meat .....	Baked, boiled, or broiled chicken, baked, boiled, or broiled white fish; creamed or broiled sweetbreads; breaded brains or scrambled with eggs; scraped beef cake; scraped liver cake.	
Miscellaneous ...	Jellies, honey, strained sweet dessert sauce, hard candies.	
Soup .....	As for liquid diets, or broths with rice, spaghetti, noodles, or puree vegetables.	All others.
Vegetables .....	Creamed, baked, or mashed white potatoes; asparagus tips; puree of asparagus; lima beans; string beans; beets; carrots; peas; squash; spinach.	All others.

## 54. Soft Diet

A soft diet is used when it is desirable to eliminate or reduce mechanical irritation in the digestive tract. Proportionate allowances of protein, fat, and carbohydrates are similar to those in the normal diet, and the total caloric intake is ample for proper maintenance in health and disease. Because of the texture of these foods, patients tire of them quickly, and therefore should not receive them any longer than is necessary. The soft diet must be readily digestible, and the irritating indigestible residue must be small. Such a diet is suitable for patients convalescing from some intestinal disorders, and during certain stages of post-operative recovery. In general, except where special diets are required, the soft diet bridges the gap between the liquid and regular diets, or liquid and light diets, or liquid and special diets.

## Sample weekly menu, soft diet

Breakfast	Dinner	Supper
Oranges. Soft cooked egg. Wheat cereal. Toast and butter. Choice of beverage.	<i>First day</i> Beef broth with noodles, crackers. Scraped beef pattie. Potato puff. Pureed peas. Toast and butter. Fruit cup. Choice of beverage.	Strained cream of carrot soup, crackers. Hot sliced chicken. Duchess potatoes. Pureed beets. Toast and butter. Peach-rice pudding. Choice of beverage.
	<i>Second day</i> Strained vegetable soup, crackers. Cream cheese square. Baked potato. Asparagus tips. Toast and butter. Pear halves. Choice of beverage.	Strained cream of celery soup, crackers. Breaded egg cutlet. Creamed potatoes. Pureed lima beans. Toast and butter. Vanilla ice cream. Choice of beverage.
	<i>Third day</i> Broth with rice, crackers. Creamed sweet- breads on toast. Mashed potatoes. Pureed carrots. Toast and butter. Butterscotch pud- ding, cream. Choice of beverage.	Strained cream of mushroom soup, crackers. Macaroni and cream. Cheese casserole. Pureed squash. Toast and butter. Pear in cherry gelatin. Choice of beverage.
	<i>Fourth day</i> Strained Berkshire soup, crackers. Baked filet flounder. Potato puff. Pureed string beans. Toast and butter. Vanilla ice cream. Choice of beverage.	Strained cream of asparagus soup, crackers. Toasted egg salad sandwich. Special escalloped potatoes. Pureed squash. Toast and butter. Apple brown betty. Choice of beverage.
Peach halves. Oatmeal. Poached egg. Toast and butter. Choice of beverage.	<i>Fifth day</i> Chicken broth, crackers. Baked eggs au gratin. Mashed potatoes Pureed peas. Toast and butter. Chocolate pudding, cream. Choice of beverage.	Strained cream of lima bean soup, crackers. Scraped beef pattie. Buttered noodles. Pureed beets. Toast and butter. Royal Anne cherries. Choice of beverage.

## Sample weekly menu, soft diet—Continued

Breakfast	Dinner	Supper
Oranges. Wheat cereal. Scrambled egg. Toast and butter. Choice of beverage.	<i>Sixth day</i> Essence of tomato soup, crackers. Roast breast of chicken. Buttered rice. Pureed spinach. Toast and butter. Vanilla ice cream. Choice of beverage.	Fruit juice cocktail. Cottage cheese. Baked potatoes. Pureed string beans. Toast and butter. Fruit gelatin, cream. Choice of beverage.
	<i>Seventh day</i> Strained Hunting- ton soup, crackers. Breaded sweet- breads. Whipped potatoes. Pureed beets. Toast and butter. Applesauce. Choice of beverage.	Strained cream of vegetable soup, crackers. Grilled cream cheese square. Golden potatoes. Asparagus tips. Toast and butter. Creamy tapioca pudding. Choice of beverage.
	Stewed prunes. Cornmeal. Soft cooked egg. Toast and butter. Choice of beverage.	

## 55. Light Diet

The light diet is a stepping stone filling the gap between the soft and full or regular diets. It is an adequate diet composed of easily digested foods. It is especially suitable for patients recovering from acute illnesses but who are still confined to bed and have no desire for a full diet.

## LIGHT DIET, FOOD SELECTION

Food	Permitted	Avoid
Beverages . . . . .	As desired.	
Bread . . . . .	White, whole wheat, rye bread, or rolls.	All hot breads.
Cereal . . . . .	As desired . . . . .	All bran.
Cheese . . . . .	Same as soft diets, plus plain welsh American cheese dishes such as baked macaroni and cheese.	All others.
Dessert . . . . .	Soft diet desserts, plus angel food cake, plain cookies, plain butter cakes with simple icings.	All others.



## LIGHT DIET, FOOD SELECTION—Continued

Food	Permitted	Avoid
Eggs .....	Same as soft diets.	
Fats .....	Butter, cream, simple salad dressings and mayonnaise as desired.	
Fruit .....	Fresh, canned, stewed, or evaporated, including melon.	
Meat .....	Same as soft diets, plus roast lamb, broiled bacon, turkey, tender broiled roast beef, tender roast beef, broiled beef patties, broiled calves liver, baked, boiled, or broiled nonoily fish, oysters, or clams.	
Soup .....	Vegetable or cream soups.	Soup made with whole navy or other shell beans and corn.
Vegetables .....	Cooked or raw vegetables.	Cabbage, cauliflower, and any other vegetables of the cabbage family, onions, and other vegetables of the onion family, cucumbers.

## Sample weekly menu, light diet

Breakfast	Dinner	Supper
	<i>First day</i>	
Oranges. Rolled wheat. Soft cooked egg. Toast and butter. Choice of beverage.	Beef broth with noodles, crackers. Broiled T-bone steak. Potato puff. Stewed tomatoes. Bread and butter. Fruit cup. Choice of beverage.	Cream carrot soup, crackers. Sliced chicken. Duchess potatoes. Pineapple cottage cheese salad. Bread and butter. Peach-rice pudding. Choice of beverage.

## Sample weekly menu, light diet—Continued

Breakfast	Dinner	Supper
	<i>Second day</i>	
Applesauce. Dry cereal. Poached egg. Toast and butter. Choice of beverage.	Vegetable soup, crackers. Broiled lamb chop. Candied sweet potatoes. Asparagus tips. Bread and butter. Pear halves. Choice of beverage.	Cream celery soup, crackers. Broiled beef pattie. Buttered noodles. Lettuce and tomato salad. Mayonnaise. Bread and butter. Ice cream. Choice of beverage.
	<i>Third day</i>	
Grapefruit halves. Wheat cereal. Scrambled egg. Toast and butter. Choice of beverage.	Broth and rice, crackers. Broiled sweetbreads. Mashed potato. Carrots. Bread and butter. Butterscotch pudding, cream. Choice of beverage.	Cream mushroom soup, crackers. Macaroni and cream cheese salad. French dressing. Bread and butter. White cup cake, fruit sauce. Choice of beverage.
	<i>Fourth day</i>	
Bananas. Dry cereal. Soft cooked egg. Toast and butter. Choice of beverage.	Berkshire soup, crackers. Baked fillet of flounder. Escalloped potatoes. Buttered string beans. Bread and butter. Ice cream. Choice of beverage.	Cream asparagus soup, crackers. Toasted egg salad sandwich. Special escalloped potatoes. Pineapple and apricot salad. Bread and butter. Apple betty. Choice of beverage.
	<i>Fifth day</i>	
Peach halves. Oatmeal. Poached egg. Toast and butter. Choice of beverage.	Chicken broth, crackers. Roast rib of beef. Mashed potato. Peas and carrots. Bread and butter. Chocolate pudding, cream. Choice of beverage.	Fruit juice cocktail. Broiled beef pattie. Buttered noodles. Celery hearts. Bread and butter. Royal Anne cherries. Choice of beverage.
	<i>Sixth day</i>	
Oranges. Whole wheat cereal. Scrambled egg. Toast and butter. Choice of beverage.	Essence of tomato soup, crackers. Roast chicken. Rice. Spinach. Bread and butter. Ice cream. Choice of beverage.	Fruit juice cocktail. Cottage cheese. Baked potato. Egg and beet salad, mayonnaise. Bread and butter. Fruit gelatin, cream. Choice of beverage.

Sample weekly menu, light diet—Continued

Breakfast	Dinner	Supper
	<i>Seventh day</i>	
Stewed prunes. Dry cereal. Soft cooked egg. Toast and butter. Choice of beverage.	Huntington soup, crackers. Broiled tenderloin. Parsley potato. Buttered beets. Bread and butter. Applesauce. Choice of beverage.	Creamed vegetable soup, crackers. Grilled cream cheese squares. Golden potatoes. Lettuce and tomato salad, mayon- naise. Creamy tapioca pudding. Bread and butter. Choice of beverage.

## Section II. REGULAR OR FULL DIET

## 56. General

The regular or full diet in a hospital is very liberal—ordinarily providing about 3,800 calories per patient. Foods in this diet are selected from those known to be readily digestible, and are selected to contain appropriate amounts of protein, fat, and carbohydrate, adequate minerals, and vitamins A, B complex, (thiamin, riboflavin, niacin, and others), C (ascorbic acid), D, and E in ample amounts. There being a greater proportion of ambulatory patients in military hospitals than in civilian hospitals, the regular diet will be found more liberal in the former as a rule. The following type meals should result, when plans are based on chapters 1-4 of this manual.

Sample weekly menu, regular diet

Breakfast	Dinner	Supper
	<i>First day</i>	
Orange halves. Rolled oats. Griddle cakes, syrup. Crisp bacon. Choice of beverage.	Beef consomme and noodles, crackers. T-bone steak. Country fried po- tatoes. Stewed tomatoes. Bread and butter. Fruit cup. Choice of beverage.	Salmon loaf and egg and parsley sauce. Duchess potatoes. Cucumbers in vine- gar. Bread and butter. Blueberry pie. Choice of beverage.

Sample weekly menu, regular diet—Continued

Breakfast	Dinner	Supper
	<i>Second day</i>	
Applesauce. Dry cereal. Fried egg. Jam. Toast and butter. Choice of beverage.	Vegetable soup, crackers. Baked ham, mus- tard. Candied sweet po- tato. Fresh asparagus. Bread and butter. Chocolate fudge cake. Choice of beverage.	Hamburger, catsup and relish. Potato chips. Lettuce, tomato, and pepper ring salad, Russian dressing. Roll and butter. Ice cream. Choice of beverage.
	<i>Third day</i>	
Grapefruit half. Wheat cereal. French toast, syrup. Link sausage. Choice of beverage.	Split pea soup, crackers. Roast veal, gravy. Cranberry sauce. Mashed potatoes. Broccoli. Bread and butter. Butterscotch pud- ding, crushed nuts. Choice of beverage.	Baked liver and onions. Parsley potato. Heart of lettuce and chiffonade dressing. Bread and butter. Strawberry short- cake. Choice of beverage.
	<i>Fourth day</i>	
Banana. Dry cereal. Soft cooked egg. Doughnut. Toast and butter. Choice of beverage.	Berkshire soup, crackers. Fried filet of floun- der, tartar sauce. Escalloped pota- toes. Buttered string beans. Bread and butter. Ice cream. Choice of beverage.	Baked Canadian bacon, horse- radish sauce. Hominy grits. Pineapple and ap- ricot salad. Bread and butter. Jelly roll. Choice of beverage.
	<i>Fifth day</i>	
Peach halves. Oatmeal. Buckwheat cakes, syrup. Toast and butter. Choice of beverage.	Julienne soup, crackers. Pot roast of beef, gravy. Oven browned potato. Buttered peas and carrots. Bread and butter. Gingerbread, lemon sauce.	Italian spaghetti and meat balls. Cole slaw. Hard roll and butter. Royal Anne cherries. Oatmeal date bar. Choice of beverage.



*Sample weekly menu, regular diet—Continued*

Breakfast	Dinner	Supper
<i>Sixth day</i>		
Orange halves.	Essence of tomato	Assorted cold cuts
Wheat cereal.	soup, crackers.	and cheese, mus-
Scrambled egg.	Roast chicken,	tard.
Crisp bacon.	dressing, giblet	Dill pickle.
Toast and butter.	gravy.	Potato salad.
Choice of beverage.	Celery hearts and	Rye bread and
	olives.	butter.
	Steamed rice.	Fruit gelatin,
	Buttered spinach.	cream.
	Bread and butter.	Choice of beverage.
	Ice cream.	
	Choice of beverage.	

*Sample weekly menu, regular diet—Continued*

Breakfast	Dinner	Supper
<i>Seventh day</i>		
Stewed prunes.	Huntington soup,	Hot meat loaf
Dry cereal.	crackers.	sandwich, gravy.
Fried egg.	Breaded pork chop.	Golden potatoes.
Jelly.	Parsley potato.	Lettuce and tomato
Toast and butter.	Harvard beets.	salad, Thousand
Choice of beverage.	Bread and butter.	Island dressing.
	Apple pie and	Bread and butter.
	cheese.	Raspberries.
	Choice of beverage.	Choice of beverage.

## GASTRO-INTESTINAL DISEASES

Section I. DIETS IN TREATMENT FOR  
PEPTIC ULCER

## 57. General

*a.* The therapy for peptic ulcer is essentially medical. It is directed at (1) maintaining a low gastric acidity and allaying irritability of the stomach and duodenum by means of suitable diet and drug therapies, (2) securing physical and mental rest, and (3) instruction of the patient in measures to prevent a recurrence. The main types of ulcer diets are: Bland, Modified Sippy (named after the originator), gelatin-milk-mixture, and the Modified Muelengracht.

*b.* Proper spacing or regulating of the feedings is important if the gastric acidity is to be sufficiently reduced throughout each 24 hours to permit quick healing. Adjustments in the diet will be dictated by the individual's response to therapy, the trend being away from fixed dietary programs to types of diet commensurate with the severity of the symptoms. A satisfactory preliminary treatment for peptic ulcer is that of giving 3 or 4 ounces (90 to 120 cc) of a mixture of half milk and half cream promptly every hour from 7 AM to 9 PM with alkaline powders or aluminum hydroxide given on the half hours. A continuous drip of milk or colloidal aluminum hydroxide through a naso-gastric latex tube may be employed. Whole milk is given to the few patients who cannot tolerate the milk and cream mixture in the early stages of treatment.

*c.* Following symptomatic relief, the diet is increased rapidly to a liberal bland diet (par. 58) with milk between meals and at bedtime and, when necessary, an anti-acid preparation an hour after meals. It is remarkable how infrequently alkali therapy is necessary if the diet receives proper attention.

The intelligent use of frequent feedings—given punctually—plus antacids: magnesium carbonate tribasic magnesium phosphate, tribasic magnesium calcium phosphate, or magnesium trisilicate is excel-

lent. But preferably aluminum hydroxide, sedatives, and psychotherapy will be found of most value in preventing a return of symptoms.

Prolonged use of vitamin deficient diets is unwarranted, but even when employed for short periods they should be supplemented by vitamin therapy.

The foregoing measures are considered superior to the "Sippy regime" but because of the widespread use of the latter an outline of a modified Sippy diet is included here. Also, a gelatin-milk diet and a modified Meulengracht diet are presented for use in the treatment of the patient suffering from a bleeding peptic ulcer. The traditional "convalescent ulcer diet" has been omitted. This affords a simplification of the treatment without, it is believed, sacrificing any advantages.

On discharge from the hospital peptic ulcer patients are advised to abstain from alcoholic beverages, tobacco, spices, condiments, and relishes. The bland diet and the practice of taking milk in mid-forenoon and midafternoon and at bedtime should be continued indefinitely.

## 58. Bland Diet

*a.* This diet is being extensively employed in the convalescent treatment for peptic ulcers and in the treatment of many other gastro-intestinal conditions. It is also useful in certain stages of recovery from many diseases.

The fruits and vegetables should always be well cooked, and those used should be young and tender with only a small amount of indigestible residue. The diet must be kept bland. Greasy, highly spiced, and seasoned foods are avoided, and mustard, pepper, vinegar, catsup, horseradish, and relishes are not permitted. Canned, smoked, and preserved meats and fish, pork, and all raw vegetables and fruits, except bananas, pastries, preserves, and candies have no place in this diet. Alcohol in all forms, carbonated waters, strong tea, and coffee must also be avoided, and dried beans in any form are contraindicated.

*b.* The necessity for ulcer patients to continue using bland diet for an indefinite period makes it



essential that they be thoroughly instructed in its preparation if optimum results are to be secured.

### BLAND DIET, FOOD SELECTION

Food	Permitted	Avoid
Beverage .....	Milk, milk drinks, fruit juices, postum, or coffee substitute.	All others.
Bread .....	White bread, toast, hard rolls, saltines, soda crackers.	All breads or crackers containing bran.
Cereals .....	All well cooked cereals and prepared cereals, spaghetti, macaroni, and noodles.	All cereals containing bran.
Cheese .....	Cream and cottage...	All others.
Dessert .....	Cornstarch, rice, tapioca, puddings, gelatin, sponge cake, cookies, custard, ice cream.	All others containing nuts, dates, raisins, and coconut.
Eggs .....	Boiled, poached, or scrambled.	Fried, and in any form if cooked with fat.
Fruit .....	Cooked apples, apricots, pears, prunes, peaches, plums, without skin. Bananas, orange juice, and other bland fruit juices.	All raw fruits except bananas. All fruits with seeds or heavy skins.
Meat .....	Calves liver, roast lamb, lamb chop, roast beef, broiled steak, roast chicken or turkey, sweetbreads, baked or broiled white or nonoily fish, brains, crisp bacon.	All others.
Soup .....	Cream soup, meat broths.	All others.
Vegetable .....	Potatoes, tender string beans, peas, asparagus tips, spinach, squash, beets and carrots. All must be well cooked. Tender lettuce, finely chopped. <i>If it is not possible to secure young tender vegetables, it is imperative that the vegetables be pureed.</i>	All vegetables containing much indigestible residue; cabbage, onions, turnips, cauliflower, and parsnips; and all uncooked vegetables except lettuce finely chopped.

### Sample weekly menu for bland diets

Breakfast	Dinner	Supper
<i>First day</i>		
Orange juice. Wheat cereal. Soft cooked egg. Bacon. Toast and butter. Cocoa.	Beef broth with noodles, crackers. Small T-bone steak. Potato puff. Buttered young peas. Bread and butter. Fruit cup. Milk.	Creamed carrot soup, crackers. White fish loaf, with egg and parsley sauce. Duchess potatoes Chopped spinach. Bread and butter. Peach-rice pudding. Milk.
<i>Nourishment*:</i> Fruit juice.		Milk.
<i>Second day</i>		
Applesauce. Cornflakes. Poached egg. Toast and butter. Cocoa.	Strained vegetable soup, crackers. Broiled lamb chop. Mashed sweet potato. Asparagus tips. Bread and butter. Pear halves. Milk.	Creamed celery soup, crackers. Broiled meat pattie. Creamed potatoes. Shredded lettuce. Rolls and butter. Ice cream. Milk.
<i>Nourishment*:</i> Milk.		Fruit juice.
<i>Third day</i>		
Orange juice. Wheat cereal. Scrambled egg. Toast and butter. Cocoa.	Cream of tomato soup, crackers. Roast chicken, gravy. Rice. Chopped spinach. Bread and butter. Ice cream. Milk.	Fruit juice cocktail. Egg souffle. Baked potato. Young string beans. Bread and butter. Fruit gelatin, cream. Milk.
<i>Nourishment*:</i> Eggnog.		Fruit juice.
<i>Fourth day</i>		
Stewed prunes. Puffed rice. Soft cooked egg. Toast and butter. Cocoa.	Strained Hunting-ton soup, crackers. Broiled tenderloin. Parsley potato. Diced young beets. Bread and butter. Applesauce. Milk.	Strained creamed vegetable soup, crackers. Grilled cream cheese squares. Golden potatoes. Asparagus tips. Bread and butter. Creamy tapioca pudding. Milk.
<i>Nourishment*:</i> Fruit juice.		Milk.

## Sample weekly menu for bland diets—Continued

Breakfast	Dinner	Supper
<i>Fifth day</i>		
Orange juice. Wheat cereal. Scrambled eggs. Toast and butter. Cocoa.	Broth with rice, crackers. Broiled sweet- breads. Mashed potato. Buttered carrots. Bread and butter. Butterscotch pud- ding with cream. Milk.	Creamed mush- room soup, crackers. Macaroni. Cheese Casserole. Pear in cherry, gelatin. Shredded lettuce. Bread and butter. White cup cake with strained fruit sauce. Milk.
<i>Nourishment*:</i> Fruit juice.		Milk chocolate.
<i>Sixth day</i>		
Ripe banana. Rice flakes. Soft cooked eggs. Toast and butter.	Strained Berkshire soup, crackers. Baked filet flounder. Escalloped pota- toes. Buttered young string beans. Bread and butter. Ice cream. Milk.	Creamed asparagus soup, crackers. Baked eggs. Hominy grits. Apricot and shredded lettuce salad. Bread and butter. Apple betty. Milk.
<i>Nourishment*:</i> Milk, malted.		Fruit juice.
<i>Seventh day</i>		
Peach halves. Oatmeal. Poached eggs. Toast and butter. Cocoa.	Chicken broth, crackers. Roast beef. Browned potatoes. Buttered peas and carrots. Bread and butter. Chocolate pudding with cream. Milk.	Creamed lima bean soup, crackers. Broiled meat pattie. Spaghetti with tomato sauce. Chopped lettuce salad. Bread and butter. Royal Anne cherries. Milk.
<i>Nourishment*:</i> Fruit juice.		Milk.

\* 10 AM and 8 PM.

## 59. Modified Sippy Diet

The following schedule of a Sippy regime is pre-  
sented to show the gradual changes permissible over  
a 22-day period. This diet is frequently prescribed  
for new and active cases of peptic ulcer.

## Sippy diet schedule

Time	Day 1-5	Day 6	Day 7-8
7 AM	Milk and cream	Milk and cream Soft egg	Milk and cream Soft egg
8 AM	Milk and cream	Milk and cream	Milk and cream
9 AM	..... do. ....	..... do. ....	..... do. ....
10 AM	..... do. ....	..... do. ....	..... do. ....
11 AM	..... do. ....	..... do. ....	..... do. ....
12 AM	..... do. ....	..... do. ....	Soft egg Cereal
1 PM	..... do. ....	..... do. ....	Milk and cream
2 PM	..... do. ....	..... do. ....	..... do. ....
3 PM	..... do. ....	..... do. ....	..... do. ....
4 PM	..... do. ....	..... do. ....	..... do. ....
5 PM	..... do. ....	Soft egg Milk or cocoa*	..... do. .... Cereal
6 PM	..... do. ....	Milk and cream	Milk and cream
7 PM	..... do. ....	..... do. ....	..... do. ....
8 PM	..... do. ....	..... do. ....	..... do. ....
9 PM	..... do. ....	..... do. ....	..... do. ....

\* Cocoa should be weak.

Time	Day 9-10	Day 11-14	Day 15
7 AM	Milk and cream Cereal	Milk and cream Soft egg Cereal	Milk and cream Egg Cereal
8 AM	Milk and cream	Milk and cream	Milk and cream
9 AM	..... do. ....	..... do. ....	..... do. ....
10 AM	..... do. ....	..... do. ....	..... do. ....
11 AM	..... do. ....	..... do. ....	..... do. ....
12 AM	Cereal Egg Cocoa	Egg Cocoa Custard	Milk and toast 2 eggs Cocoa
1 PM	Milk and cream	Milk and cream	Milk and cream
2 PM	..... do. ....	..... do. ....	..... do. ....
3 PM	..... do. ....	..... do. ....	..... do. ....
4 PM	..... do. ....	..... do. ....	..... do. ....
5 PM	Milk and toast Egg-cocoa	Milk and toast Egg-cocoa	Milk and toast Egg-cocoa
6 PM	Milk and cream	Milk and cream	Milk and cream
7 PM	..... do. ....	..... do. ....	..... do. ....
8 PM	..... do. ....	..... do. ....	..... do. ....
9 PM	..... do. ....	..... do. ....	..... do. ....

Servings of milk and cream: 1½ ounces of each.



## Sippy diet schedule—Continued

Time	Day 16	Day 17-18	Day 19
7 AM	Milk and cream Egg Cereal	Soft egg Cereal Cocoa	Milk and cream Egg Cereal
8 AM	Milk and cream	Milk and cream	Milk and cream
9 AM	..... do. ....	..... do. ....	..... do. ....
10 AM	..... do. ....	..... do. ....	..... do. ....
11 AM	..... do. ....	..... do. ....	..... do. ....
12 AM	Milk toast Egg Vanilla ice cream. Milk and cream	Minced chicken Milk Milk toast Vanilla ice cream. Milk and cream	Minced chicken Dry toast Cocoa Butter Milk and cream
1 PM	..... do. ....	Milk and cream	Milk and cream
2 PM	..... do. ....	..... do. ....	..... do. ....
3 PM	..... do. ....	..... do. ....	..... do. ....
4 PM	..... do. ....	..... do. ....	..... do. ....
5 PM	Milk toast Egg Cocoa	Egg Milk toast Cocoa	Milk toast Egg Cocoa
6 PM	Milk and cream	Milk and cream	Milk and cream
7 PM	..... do. ....	..... do. ....	..... do. ....
8 PM	..... do. ....	..... do. ....	..... do. ....
9 PM	..... do. ....	..... do. ....	..... do. ....

Time	Day 20	Day 21	Day 22
7 AM	2 eggs Cocoa Slice toast Butter	2 eggs Cocoa Milk and cream Slice dry toast Butter	Milk and cream Egg Cereal Toast
8 AM	Milk and cream	Milk and cream	Milk and cream
9 AM	..... do. ....	..... do. ....	..... do. ....
10 AM	..... do. ....	..... do. ....	..... do. ....
11 AM	..... do. ....	..... do. ....	..... do. ....
12 AM	Minced chicken Dry toast Butter Cocoa Pureed vegetable.	Lamb chop, broiled. Dry toast Cocoa Butter Baked potato or asparagus.	Cream soup Chop or minced chicken. Dry toast Pureed vegetable. Baked potato Cocoa Butter Vanilla ice cream.

## Sippy diet schedule—Continued

Time	Day 20	Day 21	Day 22
1 PM	Milk and cream	Milk and cream	Milk and cream
2 PM	..... do. ....	..... do. ....	..... do. ....
3 PM	..... do. ....	..... do. ....	..... do. ....
4 PM	..... do. ....	..... do. ....	..... do. ....
5 PM	2 eggs Cereal Milk toast	2 eggs Cereal Milk toast	Pureed, stewed fruit or baked apple (no skin). 2 eggs Milk toast Cocoa Cereal
6 PM	Milk and cream	Milk and cream	Milk and cream
7 PM	..... do. ....	..... do. ....	..... do. ....
8 PM	..... do. ....	..... do. ....	..... do. ....
9 PM	..... do. ....	..... do. ....	..... do. ....

## 60. Gelatin-Milk-Mixture Diet

a. The following mixture is supplied by the diet kitchen every 12 hours. It should be kept cool, but not cold enough to permit jelling. Flavors (chocolate, vanilla, coffee, or tea) may be added just before service. In the management of patients immediately following a hemorrhage from a peptic ulcer no ice, water, or liquids other than the gelatin mixture are to be allowed. The patient is not awakened for a feeding.

b. The gelatin milk mixture is served cool or warm as follows:

1st and 2d days.....4 oz. every 1½ hours

3d, 4th, and 5th days....5 oz. every 2 hours

6th and 7th days.....6 oz. every 2 hours

Beginning on the eighth day add to each of four feedings *one* of the following: 1 soft boiled or poached egg, 3 ounces cereal, custard, plain flavored gelatin, or ice cream.

On the ninth day, serve as above, only add *two* extras to each of three feedings. By the tenth day change to bland diet with frequent feedings or to a Sippy diet. Also important, allow water beginning on the fifth day, in increasing amounts, starting with 1 ounce at a time. Mineral oil, ½ ounce, each night, may be given after the first night. Also iron and vitamin preparations as indicated.

## Gelatin-milk-mixture diet

	Amount	Carbohydrate	Protein	Fat	Calories
Gelatin .....	30 gm	.....	27	.....	100
Glucose .....	60 gm	60	.....	.....	240
Cream (20%) .....	100 cc	3	3	18	180
Milk .....	900 cc	36	27	27	550
Total .....	.....	99 gm	57 gm	45 gm	1,070

## MODIFIED MEULENGRACHT DIET\*—Continued

## 61. Modified Meulengracht Regime

The following type of diet is occasionally prescribed for certain types of ulcer. It represents an intermediary kind of diet that may be used to follow a Sippy regime.

## MODIFIED MEULENGRACHT REGIME

*Foods Allowed:*

*Vegetable Puree:* Asparagus, beet, carrot, pea, squash, spinach, potato, tomato.

*Fruit:* Pureed apple, apricot, peach, pear, prune, orange juice.

*Puddings:* Baked custard, cornstarch, rice or tapioca pudding, plain bread pudding, plain flavored gelatin, vanilla or chocolate ice cream.

*Breads and crackers:* White, plain or toasted, with butter; graham crackers; vanilla wafers, arrow-root crackers; zwieback.

*Meats\*:* Scraped beef cakes, broiled; minced lamb; minced broiled, lamb chop baked or creamed fish; minced liver or chicken.

*Strained cereals:* Oatmeal, wheat cereal, hominy grits, cornmeal.

*Beverages:* Milk, milk and cream, buttermilk, malted milk, tea, cocoa, eggnog.

\* Meat is omitted for the first 2 days of treatment.

MODIFIED MEULENGRACHT DIET\*  
(Arranged for 2-hour feedings.)

Time of feedings	Food	Weight in grams
<i>First and second day</i>		
8 AM breakfast.	Orange juice .....	30
	Toast .....	20
	Butter .....	10
	{Milk .....	75
	{Cream .....	75
10 AM .....	Eggnog, cracker, and butter.	
12 AM dinner....	Vegetable puree .....	60
	Pudding .....	100
	Cream .....	30
	Orange juice .....	30
	Eggnog, cracker, and butter.	
2 PM .....	{Milk .....	75
	{Cream .....	75
	Fruit puree .....	60
	Pudding .....	100
	Cream .....	30
4 PM .....	Bread .....	20
	Butter .....	10
	Fruit puree .....	60
	Pudding .....	100
	Cream .....	30
6 PM .....	{Milk .....	75
	{Cream .....	75
	Fruit puree .....	60
	Pudding .....	100
	Cream .....	30

Time of feedings	Food	Weight in grams
<i>Third and subsequent days</i>		
8 AM breakfast.	Orange juice .....	30
	Strained cereal .....	90
	Cream .....	60
	Toast .....	20
	Butter .....	10
10 AM .....	Eggnog, cracker and butter.	
12 AM dinner....	Minced meat .....	60
	Mashed potato .....	100
	Vegetable puree .....	60
	Toast .....	20
	Butter .....	10
2 PM .....	Fruit puree .....	60
	{Milk .....	90
	{Cream .....	90
	Orange juice .....	30
	Eggnog, cracker and butter.	
4 PM .....	Milk .....	180
	Cocoa.	
	Chocolate paste .....	20
	Cottage cheese or minced meat .....	60
	Bread .....	20
6 PM supper ...	Butter .....	10
	Pudding .....	100
	Cream .....	30
	{Milk .....	90
	{Cream .....	90
8 PM .....	Orange juice .....	30
	Eggnog, cracker, and butter.	
	Eggnogg (recipe). Milk .....	150
	Egg (1) .....	50
	Sugar .....	5

\* Meat is omitted for the first 2 days of treatment.

Milk and water in volumes up to 5 ounces are allowed between feedings as frequently as the patient desires.

Section II. DIETS FOR GASTRITIS  
AND ENTERITIS

## 62. Gastritis

*a. ACUTE.* In addition to other measures, notably complete rest, gastric lavage, and sedation in dealing with acute gastritis, attention to diet is important. Complete abstinence from food by mouth is advisable for 24 to 48 hours. Water may be taken sparingly and only to relieve thirst. Following this initial fasting period, a bland diet (par. 58) is given and continued for a week, or longer if the patient's condition warrants.

*b. CHRONIC.* The incidence of recognized chronic gastritis has increased in direct proportion to the increasing use of the gastroscope. The diet which has



proved most helpful has consisted of so-called "bland" foods. (See par. 58.) Some authorities prefer to eliminate milk from this diet. This may be necessary if the results are not satisfactory. Appropriate adjustment in the diet to prevent any nutritional deficiencies should be made. Patients are instructed to masticate their food thoroughly, to have proper dental care, to avoid alcoholic beverages, and to restrict the use of tobacco.

### 63. Enteritis

The causes of acute enteritis are too many to discuss completely here. Chief etiological offenders are bacterial invaders, poisons, protozoan infestations, and vitamin deficiencies. Diet therapy is an important adjunct to more specific means of treatment. A diet of smooth consistency affording a minimum of residue with an abundant supply of vitamins is advocated. The bland diet outlined in paragraph 58 fills these requirements. Frequent small feedings are preferable to larger amounts of food taken infrequently.

The early stages of enteritis are frequently associated with an acute gastritis, the outstanding symptoms of which are nausea and vomiting. Complete abstinence from food for 24 to 48 hours may be advisable in the initial stages of the treatment.

## Section III. DIET IN TREATMENT FOR CONSTIPATION

### 64. General

This type of food therapy is frequently referred to as an anticonstipation or A. C. diet. There are many variations. Results of the treatment for constipation will depend, to a considerable degree, upon proper consideration of the causes of this disorder. The causes, in general, are—

*a.* Dietary faults resulting in a deficient residue—too small in amount and of abnormal consistency. Insufficient fluid intake may play an important part.

*b.* Irregularity of habit dulling the defecation reflex.

*c.* Disease conditions, notably those interrupting the nervous mechanism such as occur in *tabes dorsalis*, and those causing painful defecation, that is, anal fissures, hemorrhoids, and neoplastic growths.

*d.* The too frequent use of laxatives and cathartics causing irritability and spasm of the bowel and disturbances in the intestinal secretion.

*e.* Inadequate physical exercise.

*f.* Intestinal obstruction.

*g.* Spasms of the intestine. This may result from abnormalities mentioned above. It may be due to the presence of irritating intestinal contents and may be, in fact it often is, nervous in origin.

The correction of constipation depends upon (1) regularity of habit, (2) adequate physical exercise, (3) reduction of "nervous tension," (4) correction of disease conditions which are contributing to the cause of this abnormality, and (5) diet therapy. Some anticonstipation diets contain a large amount of cellulose or indigestible residue. However, if the patient is underweight, a diet containing less cellulose, a large amount of fat, with no change from the normal intake of carbohydrate and protein intake is indicated. These changes, unless otherwise specified, ordinarily would increase the total caloric value of the diet by about 50 percent above the maintenance level.

Diets containing a large amount of indigestible residue are contraindicated when the constipation is of nervous origin, as exemplified in the condition commonly referred to as an "irritable colon." (See par. 67.) For these patients, psychotherapy, correction of faulty habits, and the use of a bland diet are desirable.

### 65. Habitual Constipation

*a.* For the patient who apparently has an atonic intestine, a diet containing large quantities of cellulose is indicated. In the early stages of treatment the diet should consist chiefly of cooked fruits, cooked vegetables, coarse breads, and coarse cereals. Raw fruits and raw vegetables are added gradually. This diet, when effective, is continued indefinitely, the patient being properly instructed in the selection of foods before leaving the hospital.

*b.* These patients should not be deprived of the anticonstipation effects of adequate vitamins, especially thiamin, and of minerals. Also, preparations of agar and of psyllium seeds are preferable to laxatives and may be used over long periods without ill effects.

## DIET FOR TREATMENT OF HABITUAL CONSTIPATION

### Food selection.

Food	Permitted	Avoid
Beverage . . . . .	Fruit juice, coffee, coffee substitute, tea, milk, buttermilk.	

# DIET FOR TREATMENT OF HABITUAL CONSTIPATION—Continued

Food	Permitted	Avoid
Bread .....	Graham, bran, rye, whole wheat, raisin, nut bread, or muffins.	Hot bread, white breads, and crackers.
Butter and olive oil .....	As much as desired; the more eaten the better unless the patient is inclined to be obese.	
Cereals .....	Oatmeal, rolled wheat, bran breakfast foods, any of the coarse cereals. Cream and sugar with all cereals.	Refined cereals.
Desserts .....	Sherbets, ices, ice cream, and all kinds of fruit desserts. Desserts may be served with whipped cream.	All custards, cakes, pies, and puddings containing a large amount of crackers, bread, and eggs.
Eggs .....	One or two soft cooked eggs daily.	Eggs in large quantities.
Fruit .....	Stewed, all kinds, especially prunes, figs, dates, plums; fresh or canned apples, oranges, peaches, berries, pears, and grapes.	Bananas.
Meat .....	Meat in moderation.	
Nuts .....	A few (any kind), daily.	
Salads .....	All kinds of fruit and vegetables.	Chicken, lobster, fish, cheese, egg, and meat.
Salad dressing..	Any kind and in as large quantities as desired.	
Soups .....	Vegetable, vegetable bouillon, and purees.	
Vegetables .....	All kinds and in as large quantities as desired. Those generally used are carrots, turnips, rutabagas, parsnips, beets, spinach, dandelion greens, string beans, green peas, eggplant, celery, lettuce, cucumbers, radishes, tomatoes, and cabbage.	

# DIET FOR TREATMENT OF HABITUAL CONSTIPATION—Continued

Food	Permitted	Avoid
Water .....	Drink three glasses before breakfast, between meals, and before retiring.	

## Sample weekly menu for habitual constipation

Breakfast	Dinner	Supper
<i>First day</i>		
Orange halves. Rolled wheat. Soft cooked egg. Bacon. Whole wheat toast. Butter. Choice of beverage.	Beef consomme of noodles. T-bone steak. Buttered peas. Stewed tomatoes. Lettuce salad with French dressing. Whole wheat bread. Butter. Fruit cup. Choice of beverage.	Salmon loaf with egg and parsley sauce. Duchess potatoes. Spinach. Cucumbers in vinegar. Whole wheat bread. Butter. Canned apricots. Choice of beverage. Fruit juice.
<i>Nourishment..</i>		
<i>Second day</i>		
Apple. Dry cereal. Poached egg. Whole wheat toast. Butter. Choice of beverage.	Vegetable soup. Baked ham, mustard. Carrots. Fresh asparagus. Mixed green salad with Mexican dressing. Whole wheat bread. Butter. Stewed prunes with cream. Choice of beverage.	Fruit juice. Hamburger, catsup, relish. Potato chips. Lettuce, tomato, pepper ring salad, Russian dressing. Rolls. Butter. Ice cream. Choice of beverage. Fruit juice.
<i>Nourishment..</i>		
<i>Third day</i>		
Grapefruit halves. Whole wheat cereal. Scrambled eggs. Link sausages. Whole wheat toast. Butter. Choice of beverage.	Split pea soup. Roast veal, gravy. Cranberry sauce. Buttered beets. Broccoli. Celery hearts. Whole wheat bread. Butter. Fruit ice. Choice of beverage.	Baked liver with onions. Parsley potatoes. Baked squash. Hearts of lettuce with chiffonade dressing. Whole wheat bread. Butter. Strawberries, cream. Choice of beverage. Fruit juice.
<i>Nourishment..</i>		



## Sample weekly menu for habitual constipation—Continued

Breakfast	Dinner	Supper
<i>Fourth day</i>		
Stewed prunes. Dry cereal. Soft cooked eggs. Whole wheat toast. Butter. Choice of beverage.	Berkshire soup. Fried filet flounder, tartar sauce. Spinach. Buttered string beans. Combination veg- etable salad with French dressing. Whole wheat bread. Butter. Ice cream. Choice of beverage.	Baked Canadian bacon, horse- radish sauce. Hominy grits. Buttered asparagus. Pineapple and apricot salad. Whole wheat bread. Butter. Jelly roll. Choice of beverage.
<i>Nourishment..</i>	.....	Fruit.
<i>Fifth day</i>		
Peach halves. Oatmeal. Poached eggs. Whole wheat toast. Butter. Choice of beverage.	Minestrone soup. Pot roast of beef, gravy. Buttered peas and carrots. Beet salad. Whole wheat bread. Butter. Fresh pear. Choice of beverage.	Italian spaghetti with meat balls. Cole slaw. Sliced tomatoes. Hard rolls, butter. Royal Anne cherries. Oatmeal date bars. Choice of beverage.
<i>Nourishment..</i>	.....	Fruit juice.
<i>Sixth day</i>		
Orange halves. Whole wheat cereal. Scrambled eggs. Crisp bacon. Whole wheat bread. Butter. Choice of beverage.	Essence of tomato soup. Roast chicken, giblet gravy. Buttered corn. Spinach. Celery hearts, olives. Whole wheat bread. Ice cream. Choice of beverage.	Fruit juice. Assorted cold cuts, cheese, mustard. Vegetable salad. Rye bread. Butter. Fruit gelatin, cream. Choice of beverage.
<i>Nourishment..</i>	.....	Fruit juice.
<i>Seventh day</i>		
Stewed prunes. Dry cereal. Soft cooked egg. Jelly. Whole wheat toast. Butter. Choice of beverage.	Huntington soup. Breaded pork chop. Wax beans. Harvard beets. Sliced lettuce salad with Roquefort dressing. Whole wheat bread. Butter. Baked apple. Choice of beverage.	Hot meat loaf, gravy. Golden potatoes. Buttered asparagus. Lettuce and tomato salad with Thousand Island dressing. Whole wheat bread. Butter. Raspberries. Choice of beverage.
<i>Nourishment..</i>	.....	Fruit juice.

Section IV. DIETS FOR GASTRO-  
INTESTINAL NEUROSES

## 66. General

Functional disturbances of the gastro-intestinal tract may manifest themselves in emotionally unstable individuals in many ways. The most common, however, are the so-called "nervous indigestion" and the "irritable colon" which frequently occur simultaneously in the one individual both having been precipitated by the same train of events. Neurotic individuals predisposed to gastro-intestinal disturbances are most likely to suffer from attacks of nervous indigestion or dyspepsia, as well as constipation, during times of strain (that is, periods of anxiety, new responsibilities, grief, overwork, etc.).

## 67. Treatment

a. The treatment of these patients consists of (1) a genuine display of personal interest in their difficulties. The securing of the patient's confidence is essential to successful treatment. (2) A thorough examination but not prolonged investigation. (3) An appropriate readjustment of the patient's habits of living. The diagnosis being secure, reassurance of the harmlessness of the disorder will go far in relieving the patient of his symptoms. (4) Dietary regulations—alterations in diet may be necessary only during times of stress and strain.

b. In these cases constipation may sometimes alternate with bouts of diarrhea, depending upon the intensity of the "nervous tension." The disorder is often greatly intensified by the patient's flight to roughage in the diet and laxatives for relief. Adequate rest, mental and physical, and other measures which may reduce "nervous tension" and the avoidance of laxatives should not be overlooked as essential features of the treatment.

c. For the majority of patients suffering from this neurosis, the diet outlined below will be satisfactory. It is of smooth variety and contains little or no roughage. Raw vegetables, raw fruits, coffee, and fried or highly seasoned foods are to be avoided, and greasy and fatty foods are restricted. Foods that contain considerable cellulose will be well tolerated however, if properly cooked and pureed. By this process most of the irritating particles are eliminated.

ANTICONSTIPATION DIET FOR  
"IRRITABLE COLON"

Food	Permitted	Avoid
Beverage .....	Fruit juice, coffee substitute, tea, milk, buttermilk, malted milk.	All others. Coffee.
Bread .....	White bread, toast, hot biscuits.	Muffins, graham or whole wheat, and all others containing bran.
Cereal .....	Cooked cereals without bran; corn flakes, rice krispies, puffed rice; spaghetti, macaroni, hominy, rice.	Any cereals containing bran.
Cheese .....	Cream, cottage cheese.	All others.
Dessert .....	Simple puddings, custards, ice cream, gelatin, plain cake. Sugar is permitted but not too much.	Sugar in concentrated form.
Eggs .....	Soft cooked, poached, coddled, or scrambled. Moderate quantities.	Fried.
Fats .....	Butter, cream, in moderate quantities.	
Meat .....	Moderate serving of meat, fish, poultry, bacon. (Cook simply.)	Fibrous particles of all meats; all smoked or salt fish, pork.
Nuts .....	None .....	All.
Soup .....	Broths, bouillon, cream soups.	Those containing large particles of coarse vegetables and fibrous meats.
Vegetables .....	Potatoes, sweet potatoes, tender asparagus tips, pureed vegetables.	All vegetables not pureed; cabbage, cauliflower, broccoli, brussel sprouts.
Fruit .....	Pureed bland fruits such as peaches, pears, prunes.	

Sample weekly menu for anticonstipation diet for  
"irritable colon"

Breakfast	Dinner	Supper
	<i>First day</i>	
Orange juice. Wheat cereal. Soft cooked egg. Bacon. Toast. Butter. Choice of beverage.	Beef consomme of noodles. T-bone steak. Pureed peas. Pureed wax beans. Bread. Butter. Fruit ice. Choice of beverage.	Strained cream of carrot soup. Salmon loaf with egg sauce. Duchess potatoes. Pureed spinach. Bread. Butter. Pureed apricot. Choice of beverage.
<i>Nourishment..</i>	Milk.	Fruit juice.
	<i>Second day</i>	
Applesauce. Cornflakes. Poached egg. Toast. Butter. Choice of beverage.	Strained vegetable soup. Broiled lamb chop. Pureed carrots. Asparagus tips. Bread. Butter. Pureed prunes. Choice of beverage.	Fruit juice. Broiled hamburger. Mashed potatoes. Pureed string beans. Bread. Butter. Ice cream. Choice of beverage.
<i>Nourishment..</i>	Fruit juice.	Buttermilk.
	<i>Third day</i>	
Grapefruit juice. Wheat cereal. Scrambled egg. Toast. Butter. Choice of beverage.	Strained cream of pea soup. Roast veal. Cranberry jelly. Pureed beets. Bread. Butter. Butterscotch pudding and cream. Choice of beverage.	Strained cream of mushroom soup. Baked liver. Parsley potatoes. Pureed squash. Bread. Butter. Fruit juice gelatin. Choice of beverage.
<i>Nourishment..</i>	Milk.	Fruit juice.
	<i>Fourth day</i>	
Pureed prunes. Rice krispies. Soft cooked egg. Toast. Butter. Choice of beverage.	Strained Berkshire soup. Filet flounder. Pureed spinach. Pureed string beans. Bread. Butter. Ice cream. Choice of beverage.	Fruit juice. Crisp bacon. Hominy grits. Asparagus tips. Bread. Butter. Pureed apricots. Choice of beverage.
<i>Nourishment..</i>	Fruit juice.	Milk.



Sample weekly menu for anticonstipation diet for  
"irritable colon"—Continued

Breakfast	Dinner	Supper
	<i>Fifth day</i>	
Pureed peach. Oatmeal. Poached egg. Toast. Butter. Choice of beverage.	Broth. Pot roast beef. Pureed peas. Pureed carrot. Bread. Butter. Pureed pears. Choice of beverage.	Strained cream of lima bean soup. Grilled cream cheese square. Buttered noodles. Pureed beets. Bread. Butter. Vanilla pudding. Choice of beverage.
<i>Nourishment..</i>	Milk, malted.	Fruit juice.
	<i>Sixth day</i>	
Orange juice. Wheat cereal. Crisp bacon. Toast. Butter. Choice of beverage.	Essence of tomato soup. Roast chicken. Pureed squash. Bread. Butter. Ice cream. Choice of beverage.	Fruit juice. Egg souffle. Baked potato. Bread. Butter. Pureed fruit gelatin with cream. Choice of beverage.
<i>Nourishment..</i>	Fruit juice.	Milk.
	<i>Seventh day</i>	
Pureed prunes. Puffed rice. Soft cooked egg. Toast. Butter. Choice of beverage.	Strained Hunting- ton soup. Broiled tenderloin steak. Pureed wax beans. Pureed beets. Bread. Butter. Applesauce. Choice of beverage.	Strained cream of vegetable soup. Broiled beef patties. Golden potatoes. Asparagus tips. Bread. Butter. Fruit ice. Choice of beverage.
<i>Nourishment..</i>	Eggnog.	Fruit juice.

## Section V. ULCERATIVE COLITIS DIET

### 68. General

The diet outlined below is specifically intended for patients suffering from ulcerative colitis. It is also of value and is indicated, with suitable modifica-

tions, in dealing with other disorders which cause inflammatory reactions in the colon. In general, the foods must be of smooth consistency, *free from roughage*, abundant in amount, liberal in total calories and protein content, and rich in vitamins and minerals.

a. **ULCERATIVE COLITIS.** Dietary measures, prolonged rest, mental and physical, and psychotherapy are combined in the treatment of ulcerative colitis. Undue loss of protein and the possible interference with absorption of vitamins are outstanding considerations in the diet therapy for this disease.

In the acute stages of ulcerative colitis, with or without toxemia, a bland diet is used; and as the symptoms abate, this is made more liberal to include a greater variety of so-called "nonirritating" foods. The state of the patient's general nutrition will influence the caloric value of the diet allowed. Usually one providing a high caloric content is indicated. Carbohydrate and fat may be used in amounts suitable to make a palatable diet and at the same time provide sufficient calories to restore and maintain normal nutrition. Additional vitamin B<sub>1</sub> (thiamin), should be given these patients. A sample diet prescription is as follows:

Protein: 1.5 gram per kg of standard body weight.

Fat: No restriction.

Carbohydrates: No restriction.

Total calories: 35 calories per kg of standard body weight.

Vitamins: High vitamin content.

Minerals: High mineral content.

Foregoing qualifications are filled by the diet outlined in the food selection table and menus prescribed below. The patient should be furnished with instructions regarding the choice and preparation of suitable food prior to discharge from the hospital.

b. **DIVERTICULOSIS OF COLON.** Diets for this rare condition are similar to those for ulcerative colitis with the following exceptions:

(1) Vitamin concentrates may not be required.

(2) Fruit juices are used liberally with and between meals.

(3) Agar preparations, mineral oil, or both may be necessary to control constipation.

As diet therapy is so important for these cases, it should be continued indefinitely, even though all symptoms have disappeared. The diet should not be changed except on advice of the medical officer.

## DIET IN TREATMENT OF ULCERATIVE COLITIS

*Food selection.*

Food	Permitted	Avoid
Beverage .....	Cocoa, tea, strained fruit juice, milk and cream added when symptoms subside.	All iced drinks.
Bread .....	All types except those containing bran.	All types containing bran.
Cereal .....	Wheat cereal, oatmeal, cornflakes, rice flakes, puffed rice and wheat, macaroni, spaghetti.	All cereal containing bran.
Cheese .....	Cream and cottage...	All others.
Dessert .....	Bland desserts such as custard, rice pudding, gelatin, junket, sponge cake. Ice cream if eaten slowly. Use lactose and cream in making desserts to increase calories.	All desserts containing fruits or berries or nuts.
Eggs .....	Soft cooked, coddled, poached.	Fried.
Fats .....	Butter, oils.	
Fruit .....	Ripe banana, orange juice, in acute stage. Later add bland fruits; avocado, cooked pureed peaches, pears, apples, apricots.	All coarse fruits with seeds or skin.
Meat .....	All meats.....	All highly seasoned or fried meats.
Soup .....	Broth, cream soups, strained stock soup.	All others.
Vegetables .....	Potatoes, puree of asparagus, peas, string beans, beets, squash, carrots.	Any vegetable not pureed, cabbage, cauliflower, brussels sprouts, corn, broccoli.

*Sample weekly menu for ulcerative colitis*

Breakfast	Dinner	Supper
	<i>First day</i>	
Strained orange juice. Wheat cereal. Soft cooked egg. Toast. Butter. Choice of beverage.	Beef consomme with noodles, crackers. T-bone steak. Potato puff. Pureed peas. Bread. Butter. Pureed plum. Arrowroot cookies. Milk.	Strained creamed carrot soup, crackers. Salmon loaf with egg sauce. Duchess potatoes. Pureed beets. Bread. Butter. Plain rice pudding with pureed peach sauce. Milk.
<i>Nourishment:</i> Milk.		Milk.
	<i>Second day</i>	
Applesauce. Cornflakes. Poached egg. Toast. Butter. Choice of beverage.	Strained vegetable soup, crackers. Baked ham. Mashed sweet potato. Pureed asparagus. Bread. Butter. Pureed pear. Milk.	Strained creamed celery soup, crackers. Broiled meat pattie. Creamed potato. Pureed string beans. Roll. Butter. Ice cream. Milk.
	<i>Third day</i>	
Strained grapefruit juice. Wheat cereal. Scrambled egg. Toast. Butter. Choice of beverage.	Strained pea soup. crackers. Roast veal. Cranberry jelly. Mashed potato. Pureed carrots. Bread. Butter. Butterscotch pudding with cream. Milk.	Strained creamed mushroom soup, crackers. Broiled liver. Buttered potato. Pureed squash. Bread. Butter. White cup cake with strained fruit sauce. Milk.



## Sample weekly menu for ulcerative colitis—Continued

Breakfast	Dinner	Supper
	<i>Fourth day</i>	
Banana. Rice flakes. Soft cooked egg. Toast. Butter. Choice of beverage.	Strained Berkshire soup, crackers. Baked filet flounder. Special escaloped potato. Pureed string beans. Bread. Butter. Ice cream. Milk.	Strained creamed vegetable soup, crackers. Broiled steak. Baked potato. Pureed asparagus. Bread. Butter. Pureed pears. Milk.
	<i>Fifth day</i>	
Pureed peaches. Oatmeal. Poached egg. Toast. Butter. Choice of beverage.	Strained minestrone soup, creamed: Pot roast of beef. Mashed potato. Pureed peas. Bread. Butter. Chocolate pudding with cream. Milk.	Strained creamed lima bean soup, crackers. Broiled meat patties. Buttered noodles. Pureed beets. Hard roll. Butter. Prune whip with custard sauce. Milk.

## Sample weekly menu for ulcerative colitis—Continued

Breakfast	Dinner	Supper
	<i>Sixth day</i>	
Strained orange juice. Wheat cereal. Scrambled egg. Toast. Butter. Choice of beverage.	Strained essence of corn soup, crackers. Roast chicken, giblet gravy. Strained rice. Pureed squash. Bread. Butter. Ice cream. Milk.	Strained creamed celery soup, crackers. Egg souffle. Baked potatoes. Pureed string beans. Bread. Butter. Pureed fruit Gelatin with cream. Milk.
	<i>Seventh day</i>	
Strained grapefruit juice. Puffed rice. Soft cooked egg. Toast. Butter. Choice of beverage.	Strained Hunting-ton soup, crackers. Lamb chop. Whipped potato. Pureed beets. Bread. Butter. Baked apple (no skin) with cream. Milk.	Strained creamed vegetable soup. Hot meat loaf sandwich. Golden potato. Pureed asparagus. Bread. Butter. Creamy tapioca pudding. Milk.

## CALORIC MODIFICATIONS

Section I. HIGH CALORIC DIETS  
(FOR LEANNESS)

## 69. General

*a.* The term, *high caloric diet*, means a diet in which the total caloric value is from 30 to 100 percent above normal for the individual being treated. Such diets are employed in treating undernourished individuals and those who are suffering from prolonged febrile diseases, for example, tuberculosis and typhoid fever. The quotas of fat and carbohydrate are increased to provide additional calories required. It is not considered wise to increase the protein beyond 1.25 grams per kilogram of the standard body weight unless specific indications to do so are present.

*b.* Caloric intake may be increased simply by serving larger portions of food or concentrated foods, such as fats, butter, cream, cheese, candy, mayonnaise, jellies, jams, honey, syrup, etc., may be added to the regular diet. The number of meals may be increased.

*c.* High caloric diets must be specially modified when complicating diseases are present. For example, a high caloric diet prescribed for the patient suffering from typhoid fever should be of different consistency from one employed merely to correct underweight. Also, patients subject to excessive intestinal fermentation should be given more fat and less carbohydrate in the high caloric diet. In contrast patients suffering from diseases of the liver will need great restrictions in the fat content of the diet, in which case a marked increase in carbohydrate is necessary.

*d.* If there is no need to change the consistency but only to add calories, a diet prescription should read: High Caloric Diet, calories 3,500. Such an expression calls for the regular diet plus enough of the above concentrated foods to bring the total to 3,500 calories. Sample menus for liquid, soft, and regular high caloric diets are listed below.

## 70. High Caloric Liquid Diet

*a. USE.* This diet is used initially in dealing with some intestinal diseases and certain acute infections, notably typhoid fever. Liquid diets are discontinued as soon as it is safe to do so. The logical stages of diet therapy in the treatment of acute illnesses are from a liquid, to a soft, to a light, and finally to a regular diet. Combinations of added calories to any of the above are easily prepared. It will be noted that the usual liquid diet has been supplemented by other concentrated liquids.

## HIGH CALORIC LIQUID DIET

## Sample menu

Breakfast	Dinner	Supper
Strained orange juice.	11:00 AM: Milk and cream (half and half).	5:00 PM: Cream potato.
Milk and cream (half and half).	Lactose, 15 grams.	Soup (strained).
Lactose, 15 grams.	Cream pea soup, strained.	Milk and cream (half and half).
Decaffeinated coffee.	Boiled egg custard.	Lactose, 14 grams.
9:00 AM: Malted milk.	1:00 PM: Eggnog.	Plain ice cream.
Lactose, 15 grams.	3:00 PM: Cocoa milk.	7:00 PM: Malted milk.
	Lactose, 15 grams.	9:00 PM: Eggnog.

*b.* Where necessary to fit individual needs, the following foods combined with the usual liquid diet can be used:

All strained cream soups.  
Plain ice cream and ices.  
Gelatin.  
Fruit juices.  
Carbonated drinks.  
Cocoa and malted milk.  
Whipped cream.

## 71. High Caloric Soft Diet

*a. CONSTITUENTS.* This diet contains the foods included in the high caloric liquid diet plus the usual soft diet.



## HIGH CALORIC SOFT DIET

*Sample menu*

Breakfast	Dinner	Supper
Pureed fruit. Cream of wheat. Eggs. Crisp bacon. Toast, butter. Milk and cream. 10:00 AM: Orange juice.	Strained soup, crackers. Roast chicken. Mashed potato. Pureed carrots. Toast, butter. Ice cream. Milk and cream. 3:00 PM: Tomato juice.	Strained soup. Escalloped sweet-breads. Mashed sweet potato. Pureed buttered peas. Toast, butter. Applesauce with whipped cream. Milk and cream. Custard. 9:00 PM: Eggnog.

**72. High Caloric Regular Diet**

a. When the high caloric diet is prescribed without qualification, the regular diet will be used with additions in sufficient amount to increase the total caloric intake about 30 percent. This increase should be in carbohydrate and fat. Each is increased by approximately the same number of grams.

b. To obtain a high caloric diet it is merely necessary to add to or increase in the regular diet one or more of the following foods at each meal, and between meals:

Breakfast	Dinner	Supper
Jams. Jellies. Honey. Syrup. Cream. Butter. Sweetened fruit juices. 9:30 AM: Malted milk.	Extra cream. Ice cream. Lactose. Custards. Cheese. Fat meat. 3:00 PM: Malted milk.	Sweetened fruit juices. Extra cream. Rich puddings. Rich custards. Ice cream. Glucose. Salad oil. 9:00 PM: Milk and cream (half and half).

## Section II. LOW CALORIC DIETS (FOR OBESITY)

**73. Low Caloric or Reducing Diet**

a. GENERAL. Low caloric diets are generally employed for the treatment of obesity. For the overweight diabetic patient, these diets have the added effect of controlling the diabetes. The rates at which overweight patients lose weight while receiv-

ing low caloric diets may vary considerably. However, with fidelity to the program, overweight can always be corrected. Furthermore, the rate of reduction in weight can be accurately predicted. Insatiable hunger may be controlled by giving small nourishments between meals and by making the diet as bulky as possible.

b. Practically all reducing diets will at first be under the patient's basal requirements in total caloric content. It is believed by some authorities that it is better to permit a fairly liberal diet at the outset of treatment and reduce it later rather than to start out with a diet that is too exacting. As low caloric diets involve marked reduction in the food intake, a careful selection of the foods is necessary to avoid vitamin and mineral deficiencies. It is usually advisable, therefore, to supplement these diets with vitamins.

Patients being treated for obesity should be closely observed by the medical officer for the appearance of any complicating condition which might make undesirable a rapid or continuous reduction in weight.

**74. Rates of Weight Loss**

a. A slow but satisfactory reduction in weight, 2 to 3 pounds per week, will ensue if the patient's diet is reduced to conform to the following diet prescription:

Total calories: 18-25 per kilogram of standard weight.

Protein: 1-5 gram per kilogram of standard weight.

Carbohydrate: To provide approximately 50 percent of the total calories.

Fat: Fat to make up the balance of calories not supplied by protein and carbohydrate.

Adjustments in the diet will be indicated by the clinical response to the treatment.

b. A slow reduction in weight is still favored by most physicians, but there is a growing number who prefer rapid decreases in weight as secured by intensive methods of dieting.

The diet prescription for the *intensive method* of reduction is, in general, as follows:

Total calories: 400 to 600.

Protein: 1 gram per kilogram of standard body weight.

Carbohydrate: 0.6 gram per kilogram of standard body weight.

Fat: Fat to make up the balance of calories not provided by protein and carbohydrate.

Special care must be taken to provide extra vitamins and minerals. The diet may be liberalized as the desired results are obtained.

c. Instruction of the patient in the selection, preparation, and measuring of the foods is important if satisfactory progress is to be made or maintained. Measurement by standard household measures usually suffices, though if the patient is taught to weigh the food the chances of error are greatly reduced. Stress the futility of the regime, when patients eat candy or little extras unknown to the dietitian.

d. NONHOSPITALIZED PATIENT. Patients who are not in the hospital but who need the benefits of low caloric diets are given detailed instructions about the kind and quantity of foods permitted. A blank form is provided by most hospitals for this purpose. On one side the foods and amounts of carbohydrates, protein, and fats allowed for each meal are designated.

#### LOW CALORIC (REDUCING) DIETS

##### *Food selection.*

Food	Permitted	Avoid
Beverage .....	1 pint skim milk or buttermilk daily, coffee or tea without cream or sugar, unsweetened fruit juices in place of fruit.	Alcoholic and carbonated beverages, extra fruit juices.
Bread .....	½ slice dark bread per meal.	Extra bread, crackers, or desserts.
Cereal .....	Small servings whole grain cereals with skim milk.	
Cheese .....	Cottage cheese as substitute for milk or meat.	All others.
Dessert .....	Fruit, fresh or water packed.	All others.
Eggs .....	One daily, prepared without fat.	
Fats .....	½ square butter per meal.	Extra butter or spreads, peanut butter.
Fruits .....	(See Desserts.)	

#### LOW CALORIC (REDUCING) DIETS—Continued

Food	Permitted	Avoid
Meats .....	2 portions daily of any lean meat, fish, turkey, or chicken prepared without fat.	Fried or fatty meats, all gravies.
Soup .....	Clear soups and broth as desired.	All creamed soups.
Vegetable .....	2 servings of cooked vegetables and one raw vegetable prepared without fat daily. Vegetables allowed: Asparagus, broccoli, brussels sprouts, cabbage, carrots, celery chard, kale, mushrooms, onions, beans, spinach, tomatoes, turnips.	
Salad dressings..	Lemon juice or vinegar.	Mayonnaise and other salad dressings.

##### *Sample weekly menu for reducing diet (Approximately 1,200 calories)*

Breakfast	Dinner	Supper
<i>First day</i>		
Orange halves.	Beef consomme.	Cold salmon,
Wheat cereal with skim milk.	Lean T-bone steak.	lemon wedge.
Poached egg.	Peas.	Carrots.
½ slice whole wheat toast.	Chef's salad, vinegar.	Cucumbers in vinegar.
½ pat butter.	½ slice graham bread.	½ slice whole wheat bread.
Coffee (no cream or sugar).	½ pat butter.	½ pat butter.
	Fresh fruit cup.	Watermelon.
	Tea with lemon.	Buttermilk.
<i>Second day</i>		
Applesauce (no sugar).	Strained vegetable soup.	Broiled hamburger.
Dry cereal, skim milk.	Lean baked ham, mustard.	Summer squash.
Soft cooked egg.	Fresh asparagus.	Lettuce, tomato, pepper ring
½ slice whole wheat toast.	Beets.	salad, vinegar.
½ pat butter.	Celery hearts.	½ slice graham bread.
Coffee (no cream or sugar).	½ slice whole wheat bread.	½ pat butter.
	½ pat butter.	Fresh peach slices.
	Fresh pineapple.	Skim milk.
	Tea with lemon.	



## Sample weekly menu for reducing diet—Continued

Breakfast	Dinner	Supper
<i>Third day</i>		
Grapefruit half. Whole wheat cereal with skim milk. Scrambled egg. ½ slice whole wheat bread. ½ pat butter. Coffee (no cream or sugar).	Broth. Lean roast veal. Broccoli. Carrots. Pear salad. ½ slice whole wheat bread. ½ pat butter. Baked apple (no sugar). Tea with lemon.	Baked liver. Peas. Lettuce hearts, lemon wedge. ½ slice graham bread. ½ pat butter. Fresh strawberries. Buttermilk.
<i>Fourth day</i>		
Honeydew melon. Dry cereal, skim milk. ½ slice whole wheat toast. Coffee (no cream, no sugar).	Broth. Broiled filet of flounder. Brussels sprouts. Sliced tomato salad. ½ slice graham bread. ½ pat butter. Fresh fruit cup. Buttermilk.	Lean Canadian bacon. *WP pineapple and apricot salad. ½ slice whole wheat bread. ½ pat butter. Fresh blueberries. Tea with lemon.
<i>Fifth day</i>		
*WP peach halves. Oatmeal, skim milk. Poached egg. ½ slice whole wheat toast. ½ pat butter. Coffee (no cream or sugar).	Strained minestrone soup. Lean roast beef. Carrots. Asparagus. Mixed vegetable salad, vinegar. ½ slice whole wheat bread. ½ pat butter. Watermelon. Tea with lemon.	Broiled hamburger. Peas. Cole slaw, vinegar. ½ hard roll. ½ pat butter. *WP Royal Anne cherries. Skim milk.
<i>Sixth day</i>		
Orange halves. Whole wheat cereal. Scrambled egg. ½ slice whole wheat toast. ½ pat butter. Coffee (no cream or sugar).	Essence of tomato soup. Broiled chicken. Spinach. Celery hearts. Stewed onions. ½ slice whole wheat bread. ½ pat butter. Fresh pear. Tea with lemon.	Sliced cold roast beef. Dill pickles. Wax beans. Fresh fruit salad. ½ slice rye bread. ½ pat butter. Fresh apple. Buttermilk.

## Sample weekly menu for reducing diet—Continued

Breakfast	Dinner	Supper
<i>Seventh day</i>		
Grapefruit juice. Dry cereal, skim milk. Soft cooked egg. ½ slice whole wheat toast. ½ pat butter. Coffee (no cream or sugar).	Strained Hunting-ton soup. Broiled veal cutlet. Beets. Cabbage. Chef's salad, vinegar. ½ slice whole wheat bread. ½ pat butter. Applesauce (no sugar). Skim milk.	Special meat loaf. Asparagus. Lettuce and tomato salad. ½ slice graham bread. ½ pat butter. Fresh raspberries. Tea with lemon.

\* Water packed.

## DIET FOR INTENSIVE REDUCTION IN BODY WEIGHT

Sample daily menu  
(500 calorie diet)

Diet: Protein = 60 gm.; Carbohydrate = 34 gm.; Fat = 14 gm.; Total calories = 502.

	Amt. (gm.)	C	P	F
<i>Breakfast</i>				
Tomato juice .....	100	3.0	....	....
1 egg .....	1	....	6.5	6.0
½ slice toast .....	15	7.5	1.5	....
Coffee .....	....	....	....	....
<i>Dinner</i>				
Broth (any amount)....	....	....	....	....
Very lean roast beef 105 gm. (no fat) or substitute .....	....	....	26.4	4.4
6% vegetable .....	50	3.0	....	....
3% vegetable salad .....	100	3.0	....	....
6% fruit .....	100	6.0	....	....
Coffee or tea .....	....	....	....	....
<i>Supper</i>				
Broth (any amount)....	....	....	....	....
Very lean roast beef 105 gm. (no fat) or substitute .....	....	....	26.4	4.4
6% vegetable .....	50	3.0	....	....
3% vegetable salad .....	100	3.0	....	....
6% fruit .....	100	6.0	....	....
Coffee or tea .....	....	....	....	....
Totals .....	....	34.5	60.8	14.8

## FEVER DIETS

### 75. General Requirements

a. The diet for the patient with fever should meet two major specifications: (1) It should contain no article of food which is harmful and (2) it should be sufficient in amount to cover the nutritional needs. During fever metabolic rates are increased from 25 to 60 percent. The medical officer will designate specific articles of food to be avoided in each case if he deems it necessary. With few exceptions metabolic needs are the same, no matter what the type of fever; they depend on the degree of body temperature and the duration of the illness rather than on the cause of the fever.

b. The diet employed in the treatment of typhoid fever is illustrative and will be discussed in further detail.

### 76. Diet in Treatment of Typhoid Fever

a. The introduction of the high caloric diet in management of the typhoid fever patient was followed by remarkably favorable results. It has lessened the severity of the symptoms, especially the constipation and gas distention; it has prevented emaciation and bed sores so common under the old starvation regime, and the incident hemorrhage and perforation has been reduced. The patient suffering from typhoid fever requires more calories than he would in normal health. The average patient, in the absence of delirium, will take adequate amounts of food, if individual wishes are catered to. It is possible to prevent loss of weight during an attack of typhoid fever. The average adult patient suffering from this disease requires from 3,000 to 4,000 calories per day.

b. The patient may have all the food he will take and should be encouraged to eat six times a day. The diet is made up of soft, bland, non-irritating foods of high caloric value. It should be high in carbohydrate content, moderately high in protein, and with a moderate to high allowance of fat. The carbohydrates are obtained from cooked cereals, fruit juices, jellies, toast, crackers, custards, and sugar. Lactose has the same caloric value as

ordinary sugar but is less sweet and can be employed in larger amounts. Proteins are largely obtained from eggs, milk, and cream. The fats can be given in the form of butter and, especially, cream.

c. In case of marked flatulence, it may be necessary to reduce the amount of sugar and milk, and a simple diarrhea may necessitate a temporary reduction in the fat content of the diet. There should be no need of altering the diet for constipation, which is better corrected by other means.

d. Alcohol is an excellent food and can be used in moderate amounts to supplement the diet when the patient is not taking sufficient nourishment.

### TYPHOID FEVER

#### *Food selection*

Milk.	Milk toast.
Milk and limewater.	Gelatin.
Milk and eggs.	Jellies.
Skimmed milk.	Fruit juices well sweetened.
Buttermilk.	Applesauce.
Malted milk.	Prune whip.
Peptonized milk.	Vegetable soup, strained (clear or creamed).
Junket.	Meat soups.
Cream.	Beef juice.
Ice cream.	Weak tea.
Eggs, raw, soft boiled, or in custard.	Cocoa.
Egg white, egg yolk.	Sugar (cane, dextri-maltose, lactose).
Egg lemonade.	Syrup.
Albumen water.	Honey.
Butter.	Soft puddings.
Cereals, cooked.	Whiskey and brandy.
Potatoes, baked or mashed.	
Crackers (softened).	

### CONVENIENT FOOD COMBINATION FOR TYPHOID FEVER PATIENTS

<i>For 3,000 calories a day</i>	<i>Calories</i>
Milk (1,500 cc).....	1,000
Cream (500 cc).....	1,000
Lactose (240 grams).....	1,000

The above may be divided into 6 or 8 feedings. For example:



<i>Breakfast</i>	<i>Calories</i>
Wheat cereal or rice.....	180
Cream (100 cc).....	200
Butter (8 grams).....	60
Lactose (40 grams).....	160
Sugar (20 grams).....	80

*10:30 AM*

Milk (200 cc).....	140
Cream (50 cc).....	100

*Noon*

Eggs, 2.....	150
Potato, large.....	180
Butter (30 grams).....	234
Apple sauce (1 apple).....	75
Sugar (15 grams).....	60

*3-4 PM*

Tea (150 cc).....	200
Lactose (50 grams).....	20
Cream (50 cc).....	100
Crackers, 3 soda crackers.....	75
Butter (6 grams).....	62

*Supper*

Rice (25 grams).....	28
Milk (100 cc).....	70
Crackers, 3 soda crackers.....	75
Butter (8 grams).....	62
Sugar (5 grams).....	20
Cream (60 cc).....	120
Orange, large, juice of.....	100
Sugar (5 grams).....	20

*8-9 PM*

Cocoa (5 grams).....	25
Sugar (10 grams).....	40
Milk (150 cc).....	105
Cream (30 cc).....	60
Lactose (25 grams).....	100

### CONVENIENT FOOD COMBINATION FOR TYPHOID FEVER PATIENTS

<i>For 4,000 calories a day</i>	<i>Calories</i>
Milk (1,500 cc).....	1,000
Cream (500 cc).....	1,000
Lactose (480 grams).....	2,000

This furnishes 8 feedings each approximately of—

Milk (180 cc).....	120
Cream (60 cc).....	120
Lactose (60 grams).....	240

For 5,000 calories daily—additions in the form of butter, rice, crackers, and fruits are made to the above milk, cream, and lactose mixture.

### SAMPLE TYPHOID DIET WHICH WILL FURNISH 3,000 CALORIES

(Instead of frequent feeding, the following may be used.)

<i>Breakfast</i>	<i>Calories</i>
------------------	-----------------

Wheat cereal (4 tablespoons, cooked).....	100
Toast (1 slice 30 grams before toasting).....	

Cream, 100 cc (3½ oz.) 20% which is approximately the same as the top 4 inches from a quart bottle of milk that has stood at least 6 hours..... 200

Butter (8 g).....	60
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Lactose (40 g) 1½ oz.

To add lactose to milk, boil 15 g in 30 cc water, cool and add to milk..... 160

Coffee, 1 large cup.....	00
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Sugar, 20 g.....	80
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*10-10:30 AM*

Milk, 200 cc (6⅔ oz.).....	140
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Cream, 50 cc (1⅔ oz.).....	100
----------------------------	-----

*Dinner*

Eggs, 2.....	150
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Potato, 1 medium.....	100
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Bread, 1 slice or roll.....	80
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Butter, 30 g.....	234
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Applesauce, 1 medium sized apple.....	75
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Sugar, 15 g (½ oz.).....	60
--------------------------	----

Potato baked, served with butter. Apple baked 15 g sugar and 8 g butter.

*3-4 PM*

Tea 150-200 cc.....	00
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Lactose 50 g (1⅔ oz.).....	200
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Sugar 5 g.....	20
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Cream 50 cc (1⅔ oz.).....	100
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Crackers, 2 soda.....	75
-----------------------	----

Butter 8 g.....	62
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*Supper*

Rice 25 g (1 oz. boiled).....	100
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Milk 100 cc (3¼ oz.).....	70
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Toast 30 g (1 slice).....	80
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Butter 8 g.....	62
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Sugar 5 g for cereal.....	20
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Cream 60 cc (2 oz.).....	120
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Orange juice, ½ glass.....	100
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Sugar (5 g with orange).....	20
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*8-9 PM*

Cocoa 5 g.....	25
----------------	----

Sugar 10 g.....	40
-----------------	----

Milk 150 cc (5 oz.).....	105
--------------------------	-----

Cream 30 cc (1 oz.).....	60
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Lactose 25 g.....	100
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## DIETS FOR HEART, KIDNEY, AND LIVER DISORDERS

## Section I. DIET IN HEART DISEASE

## 77. General

*a.* Treatment of the patient with heart disease is directed toward reducing the work required of the heart and maintaining or restoring circulatory efficiency. Much can be accomplished by dietary management based upon the evaluation of the needs of the individual patient. In the absence of symptoms or complications, no special diet is necessary. Obesity, however, should be corrected by appropriate dietary restrictions. A reduction of the work load of the heart will ensue, and cardiac failure may be prevented or, at least, postponed.

*b.* In the treatment of the patient with diminished cardiac reserve, heavy meals are to be avoided. Light meals, four to six daily, are preferable to three conventional meals. This measure reduces the *post cibal*, or after eating peak of cardiac work and minimizes the possibility of a hypoglycemia. The latter is of particular importance for patients who are receiving low caloric diets and who have disease of the coronary arteries. In the dietary control of cardiac edema, the intake of both salt and water should be restricted in moderation. Edema due to hypoproteinemia may become a complicating factor if an adequate intake of protein is not maintained.

## 78. Angina Pectoris

Obese patients subject to attacks of angina pectoris will benefit from a low caloric diet. Four or five light nourishments a day are preferable to three conventional meals. A liberal carbohydrate intake should be allowed.

## 79. Coronary Thrombosis with Myocardial Infarction

For the first few days after the myocardial infarction has occurred, fluid, sufficient in amount to relieve thirst and replace that lost, should be provided. Small feedings of light, easily digested foods should be given five or six times a day. Foods selected should be small in bulk and those not likely to cause

gaseous distention. Later, if the patient is improving satisfactorily, a bland diet is allowed providing approximately 2,000 calories a day, distributed over four or five small meals. Restriction of salt is necessary only if congestive failure threatens. The patient is instructed to avoid heavy meals indefinitely.

## 80. Congestive Heart Failure

*a.* During the acute phase, a bland low salt diet totaling 1,200–1,800 calories and containing  $\frac{3}{8}$  gram of protein per kilogram of standard weight is suitable in most cases. The protein is increased, as soon as practicable, to at least 1 gram per kilogram of body weight. Bulky and gas-producing foods are to be avoided. Nourishment should be given in frequent small feedings. All salty foods are avoided, and no salt is used in cooking or serving. As edema is controlled, additions to the salt intake are permissible.

*b.* A moderate restriction of the fluid intake (1,000–1,200 cc) usually suffices except in severe myocardial failure, when further restrictions are indicated. The regulation of the fluid intake will be modified by thirst, atmospheric temperature, and excessive extrarenal fluid loss due to diarrhea, vomiting, and perspiration.

*c.* In severe congestive failure stringent restriction of the fluid and caloric intake may be indicated for a day or two. For this purpose the Karell diet is useful. This consists of feedings of 200 cc of skimmed milk four times in 24 hours, no additional food or fluid being allowed; though, when necessary, cracked ice may be given to allay thirst. Marked diuresis may be effected by this regimen, but continuance of the diet for more than a day or two rarely is advisable. The food and fluid allowances are increased gradually until the patient is receiving a bland, low salt diet. As convalescence progresses and the edema subsides, the restrictions on fluid intake are removed, and the temperate use of salt is permitted unless signs of fluid retention appear.

*d.* For convenience a simplified chart of diets needed in various diseases of the heart and kidney is given in table IV.



Table IV. Diets in diseases of the heart and kidneys

Disease	Protein	Calories	Salt	Liquid	Feedings
Congestive heart failure (during acute phase).	$\frac{2}{3}$ 1 gm per kg* (1,200–1,800).	Moderately restricted.	None	1,000–1,200 cc.	Frequent.
Coronary artery occlusion.	Normal allowance.	1,500–2,000	No restriction.	No restriction.	Frequent.
Chronic nephritis with edema, without nitrogen retention.	11.25 gm per kg.*	Normal quota.	None	1,000–1,200 cc.	.....
Chronic nephritis with nitrogen retention—no edema.	$\frac{2}{3}$ 1 gm per kg* in acute phases.	Normal quota.	No restriction.	No restriction.	.....
Acute nephritis with nitrogen retention.	$\frac{2}{3}$ gm per kg.*	1,500–2,000.	Moderate restriction.	No restriction.	Frequent.
Chronic nephritis with nitrogen retention and edema.	1 gm per kg.*	Normal quota.	Moderate restriction.	Slight, if any, restriction.	.....

\* Per kilogram of the standard body weight.

When practicable, liberal allowances of carbohydrate—from 400 to 500 grams—are included in these diets.

## SALT POOR, HIGH CARBOHYDRATE MODERATE PROTEIN (70 g) DIET

(All food cooked without salt)

Breakfast	Dinner	Supper
	<i>First day</i>	
Orange juice.	Small T-bone steak.	Duchess potatoes.
Wheat cereal.	Baked potato.	Beets.
Milk, $\frac{1}{2}$ pint.	Peas.	Large grapefruit.
Soft cooked egg.	Chefs' salad, vinegar.	Avocado salad.
Toast.	Bread.	Rolls.
Sweet butter.	Sweet butter.	Sweet butter.
Jam.	Canned fruit cup.	Jelly.
Coffee, cream.	Vanilla wafers.	Blueberries, cream.
10:00 AM: Fruit juice with lactose.	Coffee or tea.	Milk, $\frac{1}{2}$ pint.
	3:00 PM: Fruit juice freeze with fruit ice.	8:00 PM: Fruit juice with lactose.
	<i>Second day</i>	
Applesauce.	Broiled lamb chop.	Toasted lettuce, and tomato sandwich.
Dry cereal.	Candied sweet potato.	Baked stuffed potato.
Milk, $\frac{1}{2}$ pint.	Asparagus tips.	String beans.
Poached egg.	Celery heart.	Pineapple date salad.
Toast.	Bread.	Rolls.
Sweet butter.	Sweet butter.	Sweet butter.
Marmalade.	Bing cherries.	Glazed pear.
Coffee, cream.	Coffee or tea.	Milk, $\frac{1}{2}$ pint.
10:00 AM: Fruit juice with lactose.	3:00 PM: Fruit juice with lactose.	8:00 PM: Fruit juice with lactose.
	Bread and jelly sandwich.	

## SALT POOR, HIGH CARBOHYDRATE MODERATE PROTEIN (70 g) DIET—Continued

Breakfast	Dinner	Supper
	<i>Third day</i>	
Grapefruit half.	Roast veal.	Potato salad with vinegar dressing.
Whole wheat cereal.	Cranberry sauce.	Peas.
Milk, $\frac{1}{2}$ pint.	Mashed potatoes.	Peach, raisin salad.
Scrambled egg.	Carrots.	Bread.
Toast.	Lettuce hearts, vinegar.	Sweet butter.
Sweet butter.	Bread.	Strawberry shortcake.
Jelly.	Sweet butter.	Milk, $\frac{1}{2}$ pint.
Coffee, cream.	Baked apple.	8:00 PM: Fruit juice with lactose.
10:00 AM: Fruit juice with lactose.	Coffee or tea.	
	3:00 PM: Fruit juice with lactose.	
	Vanilla wafers.	
	<i>Fourth day</i>	
Banana.	Sweet potato fluff.	Roast lamb, mint sauce.
Dry cereal.	String beans.	Steamed rice.
Milk, $\frac{1}{2}$ pint.	Tomato, cucumber salad.	Asparagus tips.
Soft cooked egg.	Bread.	Apricot salad.
Toast.	Sweet butter.	Bread.
Sweet butter.	Fruit ice.	Sweet butter.
Jam.	Coffee or tea.	Jelly roll.
Coffee, cream.	3:00 PM: Fruit juice with lactose.	Milk, $\frac{1}{2}$ pint.
10:00 AM: Fruit juice with lactose.	Hard candy.	8:00 PM: Fruit juice with lactose.

SALT POOR, HIGH CARBOHYDRATE MODERATE  
PROTEIN (70 g) DIET—Continued

Breakfast	Dinner	Supper
<i>Fifth day</i>		
Peach halves. Oatmeal. Milk, ½ pint. Toast. Sweet butter. Poached egg. Jelly. Coffee, cream. 10:00 AM: Fruit juice with lactose.	Roast beef. Parslied potato. Carrots. Bread. Sweet butter. Salad bowl, vinegar. Cup cake with lemon sauce. Coffee or tea. 3:00 PM: Fruit juice with lactose.	Spaghetti salad with vinegar dressing. Peas and mushrooms. Pear and prune salad. Rolls. Sweet butter. Royal Anne cherries. Plain cookies. Milk, ½ pint. 8:00 PM: Fruit juice with lactose.
<i>Sixth day</i>		
Orange halves. Whole wheat cereal. Milk, ½ pint. Scrambled egg. Toast. Sweet butter. Coffee, cream. 10:00 AM: Fruit juice.	Baked chicken. Steamed rice. Spinach. Celery hearts. Bread. Sweet butter. Fruit ice. Coffee or tea. 3:00 PM: Fruit juice with lac- tose, plain cookies.	Potatoes in half- shell. Wax beans. Fruit salad bowl. Rye bread. Sweet butter. Watermelon. Milk, ½ pint. 8:00 PM: Fruit juice with lactose.
<i>Seventh day</i>		
Stewed prunes. Dry cereal. Milk, ½ pint. Soft cooked egg. Toast. Sweet butter. Marmalade. Coffee, cream. 10:00 AM: Fruit juice with lactose.	Broiled veal cutlet. Parslied potato. Harvard beets. Chefs' salad, lemon wedge. Bread. Sweet butter. Applesauce. Plain cake. Coffee or tea. 3:00 PM: Fruit juice with lac- tose, graham crackers and jelly.	Asparagus tips on toast, white sauce. Golden potatoes. Sliced tomato salad. Bread. Sweet butter. Raspberries. Milk, ½ pint. 8:00 PM: Fruit juice with lactose.

## Section II. DIET IN TREATMENT OF NEPHRITIS

### 81. Effects of Protein and Salts

*a.* Probably more harm than good has been done in the past by special diets, especially those of low protein content, in the treatment of various forms of nephritis. In the presence of albuminuria, protein is being lost from the body. There is no evidence that the amount of protein in the ordinary diet is injurious to the kidney, although in the presence of greatly diminished renal function it may lead to an accumulation of nitrogenous products in the body.

*b.* In acute nephritis, the intake of sodium chloride and sodium bicarbonate should be restricted. This can be satisfactorily accomplished by omitting salt in cooking and serving, and by selecting foods having little or no salt content. When oliguria is marked, and nausea, headache, and other symptoms of acute nephritis are prominent, a marked limitation of intake to 250–1,000 cc of fruit juice, tea, or flavored 25 percent glucose may be helpful. These severe restrictions should not be continued for more than a day or two. As soon as it is practicable, the patient should be allowed a diet containing adequate calories, high in carbohydrate and containing at least 1 gram protein per kilogram of the standard body weight.

*c.* No restrictions in diet are indicated for the treatment of chronic nephritis without edema or nitrogen retention. When nitrogen retention and salt loss develop in the late or preuremic phases, the problem is chiefly one of combating a more or less severe anorexia—any food which the patient will eat is better than no food. When nitrogen retention is marked (nonprotein nitrogen above 60 mg per 100 cc) a moderate restriction of protein, to 50 grams daily, will retard its rise. An adequate salt and water intake is essential.

*d.* In chronic nephritis with edema, and in the nephritic syndrome, restriction of salt and other sodium salts is indicated; opinions on the desirability of restricting water *per se* vary. The diet should contain enough protein to maintain metabolic nitrogen equilibrium and to replace the protein lost in the urine. As a rule, however, diets containing protein in excess of 100 grams daily are poorly taken and even when they are ingested do not seem to lead to any more rapid regeneration of plasma protein.

*e.* In the treatment of hypertension *per se* subjec-



tive improvement is gained by reducing the amount of salt in the diet. Whether or not the course of the hypertension is altered by this measure is highly debatable. When evidences of cardiac or renal failure develop, the diet is that indicated for one or the other of these conditions.

## 82. Diet for Chronic Nephritis

An illustrative diet, containing approximately 50 grams of protein is given below. It is recommended for patients with chronic nephritis, whose blood non-protein nitrogen values are above 60 milograms per 100 cc. Salt need not be restricted, except in the presence of considerable edema (swelling).

*Sample menu for chronic nephritis*

Breakfast	Dinner	Supper
Orange juice.	½ serv. T-bone steak.	Duchess potatoes.
Wheat cereal.	Peas.	Beets.
Milk, ½ pint.	Chefs' salad,	Large grapefruit.
Soft cooked egg.	vinegar.	Avocado salad.
1 slice toast.	1 slice bread.	Roll.
Sweet butter.	Sweet butter.	Sweet butter.
Jam.	Canned fruit cup.	Jelly.
Coffee, cream.	Vanilla wafers.	Blueberries, cream.
	Coffee or tea.	Coffee or tea.
10:00 AM: Fruit juice.	3:00 PM: Fruit juice.	8:00 PM: Fruit juice.

## Section III. DIETS FOR LIVER AND GALL BLADDER DISEASE

### 83. Diet for Liver Therapy

a. Diet therapy plays an important part in aiding hepatic function in the presence of disease of the liver. Experimental and clinical observations indicate the value of palatable diets, high in caloric content and high in carbohydrate, with adequate protein (approximately 1 gm per kilogram of the normal body weight) and a low fat content. The diet is supplemented with vitamins notably thiamin, riboflavin, and niacin, and, in cases of obstructive jaundice, vitamin K in addition may be prescribed by the medical officer. In the event of ascites or edema, salt is omitted from the diet and the water intake is reduced.

b. Formerly the restriction of protein was advised for these patients. Now the trend is to give increasing amounts of this food component. A conservative policy is to supply sufficient for current needs but

avoid excesses which might add to the functional load of injured hepatic cells. Frequent feedings, every 3 or 4 hours, in small quantities, are recommended.

## DIET FOR LIVER DISEASE

### *Food selection:*

Food	Permitted	Avoid
Beverage .....	Tea, coffee, skim milk, fruit juices.	Chocolate drinks.
Bread .....	No restriction.	
Cereal .....	No restriction.	
Cheese .....	Skim milk cottage cheese.	All others.
Desserts .....	Plain desserts made without fat and eggs. Jams, jellies, hard candies, fruit ices, plain cakes and cookies.	Pies, cakes, ice cream, custards. Anything with nuts.
Eggs .....	Restrict to one daily.	
Fats .....	None .....	Butter, cream, mayonnaise, salad dressings, cooking oils.
Fruits .....	All fruits—except melons.	Watermelon and cantaloupe, honeydew melon.
Meat .....	Lean beef, liver, veal, lamb, chicken, turkey, fish.	Pork, ham, all fried, spiced or fatty meat.
Soup .....	Skimmed, meat, chicken or vegetable broth skimmed milk.	All others.
Vegetables .....	All whole bland vegetables, fresh or cooked.	Turnip, parsnips, cabbage, onion, cauliflower, brussels sprouts, corn, broccoli, other gas formers.

### *Sample menus: low fat, high carbohydrate, moderate protein*

#### *Liquid diet.*

Breakfast	Dinner	Supper
Grapefruit juice.	Skimmed chicken broth.	Grape juice.
Farina.	Canned pineapple juice.	Cream of wheat.
Skimmed milk.	Skimmed milk.	Skimmed milk.
Sugar.	Tea or coffee.	Sugar.
Coffee.	2:00 PM: Orange juice.	Tea or coffee.
10:00 AM:		9:00 PM: Canned pear juice.
Orange juice.		Hard candy.
Gelatin dessert.		

Sample menus: low fat, high carbohydrate, moderate protein—Continued

Soft diet.

Breakfast	Dinner	Supper
Puree of fresh figs. Wheat cereal. Skimmed milk. Toast. Jam. Coffee. 10:00 AM: Orangeade. Hard candy.	Skimmed beef broth. Poached egg (one). Mashed potatoes. Puree of peas. Bread. Jelly. 3:00 PM: Lemonade. Hard candy.	Riced potatoes. Asparagus tips. Toast. Jam. Puree stewed prunes. Tea or coffee. 9:00 PM: Skimmed milk, or Grapefruit juice.

REGULAR DIET

Weekly menu

All food cooked without fat.

Breakfast	Dinner	Supper
<i>First day</i>		
Orange juice. Wheat cereal. Skim milk. Soft cooked egg. Toast and jelly. Coffee. 10:00 AM: Fruit juice.	Beef Consomme. Lean T-bone steak. Baked potato. Peas. Chef's salad, vinegar. Bread and jam. Canned fruit cup. Vanilla wafers. Tea or coffee. 3:00 PM: Fruit juice. Hard candy.	Lean roast veal. Duchess potatoes. Beets. Grapefruit salad. Bread and jelly. Blueberries. Skim milk. Coffee or tea. 8:00 PM: Fruit juice.
<i>Second day</i>		
Applesauce. Dry cereal. Skim milk. Soft cooked egg. Toast and jam. Coffee. 10:00 AM: Fruit juice.	Vegetable broth. Broiled lean lamb chop. Candied sweet potato. Asparagus tips. Pineapple salad. Bread and jelly. Bing cherries. Coffee or tea. 3:00 PM: Fruit juice. Bread and jelly sandwich.	Broiled beef pattie. Parslied potato. String beans. Lettuce, tomato salad. Rolls and jam. Fruit ice. Coffee or tea. 8:00 PM: Fruit juice.

REGULAR DIET—Continued

Breakfast	Dinner	Supper
<i>Third day</i>		
Grapefruit half. Whole wheat cereal. Skim milk. Scrambled egg. Toast and marmalade. Coffee. 10:00 AM: Fruit juice.	Chicken broth. Lean roast veal. Cranberry sauce. Mashed potato. Carrots. Pear salad. Baked apple. Coffee or tea. 3:00 PM: Fruit juice. Vanilla wafers.	Baked liver. Buttered potatoes. Summer squash. Lettuce salad, vinegar. Bread and jam. Strawberries with plain cake. Coffee or tea. 8:00 PM: Fruit juice.
<i>Fourth day</i>		
Banana. Dry cereal. Skim milk. Soft cooked egg. Toast and jelly. Coffee. 10:00 AM: Fruit juice.	Vegetable broth. Broiled flounder. Baked sweet potato. String beans. Sliced tomato salad. Bread and jam. Fruit ice. Coffee or tea. 3:00 PM: Fruit juice. Hard candy.	Lean roast lamb. Mint sauce. Steamed rice. Asparagus tips. Pineapple and apricot salad. Bread and marmalade. Jelly roll. Coffee or tea. 8:00 PM: Fruit juice.
<i>Fifth day</i>		
Peach halves. Oatmeal. Skim milk. Poached egg. Toast and jelly. Coffee. 10:00 AM: Fruit juice.	Beef broth. Lean roast beef. Parsley potato. Carrots. Vegetable salad, vinegar. Bread and jam. Cup cake with lemon sauce. Coffee or tea. 3:00 PM: Fruit juice. Crackers and jelly.	Broiled beef pattie. Spaghetti. Peas. Pear salad. Rolls and jelly. Royal Anne cherries. Plain cookies. Coffee or tea. 8:00 PM: Fruit juice.
<i>Sixth day</i>		
Orange halves. Whole wheat cereal. Skim milk. Scrambled egg. Toast and marmalade. Coffee. 10:00 AM: Fruit juice.	Essence of tomato soup. Broiled chicken. Steamed rice. Spinach. Celery hearts. Bread and jam. Fruit ice. Coffee or tea. 3:00 PM: Fruit juice. Plain cookies.	Sliced cold roast beef. Baked potato. Wax beans. Fresh fruit salad. Rye bread and jelly. Fresh plums. Coffee or tea. 8:00 PM: Fruit juice.

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## REGULAR DIET—Continued

Breakfast	Dinner	Supper
	<i>Seventh day</i>	
Stewed prunes. Dry cereal. Skim milk. Soft cooked egg. Toast and jelly. Coffee. 10:00 AM: Fruit juice.	Chicken broth. Broiled veal cutlet. Parsley potatoes. Beets. Chef's salad, vinegar. Bread and jelly. Applesauce. Plain cookies. Coffee or tea. 3:00 PM: Fruit juice. Hard candy.	Special meat loaf. Golden potatoes. Asparagus. Tomato salad. Bread and jam. Raspberries. Coffee or tea. 8:00 PM: Fruit juice.

## SALT POOR, REGULAR DIET

All foods are prepared without adding salt or fat.

Breakfast	Dinner	Supper
Fresh figs. Banana. Wheat cereal. Toast and jam. Sugar. Skim milk, 120 cc.	Lean lamb chops. Baked potato. Fresh asparagus. Bread and jelly. Pineapple. Hard candy.	Scrambled egg (one). Mashed potato. String beans. Bread and jam. Fresh plums. Candy.

## 84. Diet in Gall Bladder Treatment

Appropriate diet therapy for patients with chronic diseases of the gall bladder will improve their sense of general well being and will aid in preventing acute episodes of the disease.

Diets which have proved most satisfactory are the same, in general, as those employed in the treatment of diseases of the liver, and which are outlined in paragraph 83. Obesity is a common associate of chronic disease of the gall bladder. When this combination occurs a suitable reduction in total calories is necessary. In view of the chronic nature of the disorder, it is desirable to have the patient continue with the special diet indefinitely. The most important consideration concerning the diet for patients with gall bladder inflammation is *the restriction in fat*. This is in spite of the fact that fatty foods are most effective agents in emptying the gall bladder. A low fat diet is therefore necessary.

## DIETARY MANAGEMENT FOR DIABETIC

## 85. General

*a.* Diet regulation is absolutely essential for the diabetic patient. Diabetes should be considered an incurable disease, and in consequence treatment is lifelong. The central principle in *diabetes mellitus* is the inability of the body to utilize sugar in the blood, because of insufficient *insulin*. This hormone is secreted by the pancreas of normal persons, but is diminished or absent in diabetics. Hence *diabetes* from this point of view is a pancreatic disease. However from the nutritional point of view it is a general metabolic one, manifested in advanced stages by appearance of unused sugar in the urine (glycosuria).

*b.* It is desirable to have the patient spend the initial period of treatment in a hospital. Acquaintance with the characteristics of the individual patient is thus made possible. Furthermore, treatment under controlled conditions inspires in the patient a proper respect for the disease with which he is afflicted. A short course of training in the preparation of the diet, the administration of insulin, testing the urine for sugar, and in special hygiene for the diabetic patient under suitable conditions is thus allowed. The course is given by a nurse or dietitian. It is imperative that when diabetic patients are discharged from the hospital they are given detailed outlines of their diets, showing the equivalent of weighed portions in household measures.

## 86. Treatment

*a.* The object of the treatment for diabetes is to restore and maintain physiological blood sugar and cholesterol values, to correct and prevent glycosuria and acetonuria, to secure normal nutrition, and by virtue of these accomplishments, to restore the patient to a normal sense of well being with courage, ambition, and ability to carry on a useful existence.

*b.* For uncomplicated diabetes the measures are (1) special diet, (2) insulin, (3) training the patient, (4) exercise, and (5) miscellaneous measures. The first three of these will be discussed below; the others are best directed by the medical officer.

## 87. Special Dietary Measures

*a. GENERAL.* In prescribing the diet relative importance of protein, fat, carbohydrate, and the total caloric value must be accurately judged. Vitamin and mineral deficiencies should be guarded against. Because carbohydrate is so very important in this disease, the possible sources of blood sugar must always be kept in mind. Approximately 58 percent of the dietary protein, 10 percent of the fat, and 100 percent of the carbohydrate become available in the blood as sugar. Regarding the effects of the respective foods on diabetes, Allen's words remain valid, "The food which tends most strongly to produce glycosuria is carbohydrate. Protein comes second, but its glycosuria action in average cases is not equal to its theoretical glucose value. Fat seems to be important chiefly through the calories furnished by it, rather than as a theoretical direct source of glucose. *The most important factor governing insulin requirement with the ordinary diet is not the carbohydrate content, but the total caloric content.*" It must not be assumed, however, that the patient's caloric needs can always be predicted accurately in advance. A certain amount of adjustment in diet values is usually necessary. Even then the best result is only an approximation of the patient's needs, which may be expected to change from time to time. On the other hand it will be found that the average diabetic patient requires, within limits, approximately the same total amount of food as the nondiabetic subject in order to do the same amount of work, providing the diabetes is under control.

*b. PROTEIN CONTENT.* *One gram of protein per kilogram of the standard, not the actual body weight* (tables 3 and 4 of the app.), satisfies the protein requirement of the active adult. Protein allowances as low as  $\frac{2}{3}$  gram per kilogram (table 1B of the app.) are permissible but not desirable. Increases to 1.25 grams per kilogram may be allowed.

*c. CARBOHYDRATE CONTENT.* The carbohydrate quota is varied with the severity of the diabetes. The patient who has mild diabetes and does not need insulin is allowed less carbohydrate than the patient



who has a more severe diabetes and who does require insulin. The initial amount—if it is probable that insulin will not be needed—may contain 100 to 120 grams of carbohydrate. With control of the diabetes small additions are made from time to time until the total carbohydrate for each day reaches 150 and preferably 200 grams *if this amount can be tolerated without postcibal* (after eating) *glycosuria* or hyperglycemia. Greater restriction of the carbohydrate than that necessary to prevent glycosuria and hyperglycemia appears to be unwise. The tolerance for carbohydrate is actually reduced by unnecessary reduction of the intake of carbohydrate. The initial carbohydrate allowance is greater for the undernourished diabetic patient who needs insulin from the outset. One hundred and twenty-five to 150 grams of carbohydrate are allowed at once and after the diabetes is controlled the amount is gradually increased over a period of weeks or months until the so-called permanent diet contains between 200 and 250 grams. Such liberal quotas are made possible by insulin. It must be borne in mind that considerable increases in the carbohydrate intake may be made with but relatively little effect on the insulin requirement, providing the total caloric value of the diet is not increased.

*d. TOTAL CALORIES.* The total caloric value of the diet is of extreme importance. Restrictions of or additions to the total caloric value of the diet may have a far-reaching effect, and must be planned with advice of the medical officer. Starvation and “fast days” are no longer necessary in the treatment of diabetes, although reducing diets are often used. As approximately 75 percent of adult diabetic patients are overweight, the most powerful means of improving their carbohydrate tolerance is to institute a weight reduction. All authorities on diabetes are agreed that the obese diabetic patient should be reduced and yet it is incomprehensible why this efficient means of controlling the disease and avoiding the use of insulin is so often neglected. In the untreated obese diabetic patient who has a mild diabetes, barring complications, control of the diabetes can be maintained by reducing the total caloric intake sufficiently to accomplish a slow reduction in weight. If caloric requirements are estimated carefully and based on patients’ actual job activity much trouble with later modifications of the diet can be avoided. It is discouraging to patients to change their diets and insulin dosage frequently. Caloric modifications for diabetics above, average, and below normal weight are given in the following paragraphs.

(1) *For overweight patient.* Only 18 calories per kilogram of the standard, not actual, body weight are

allowed at first for the *overweight diabetic patient*. Adjustments may be made if the reduction in weight is too rapid or too slow, keeping in mind that patients may be losing flesh but retaining water sufficient to prevent any appreciable change in the actual weight for a period of several days. Later the rate of the reduction of body weight may be slowed up to a pound or two per month as soon as the diabetes is controlled. Suitable increases in the total caloric allowance are made to secure this end, when the body weight reaches a satisfactory level. This may require several months; then small further increases may be made to stabilize the weight at the final number of pounds desired. Any return to overweight would, of course, restore the hazards which accompany it. *Patients must be warned of their danger from overweight.*

(2) *For standard weight patient.* The diabetic patient whose weight is about at the *standard level* is allowed a more liberal diet even in the early days of treatment. Twenty-five calories per kilogram of body weight are given until the diabetes is controlled. Thereafter gradual additions are made to the total calories, in fat or carbohydrate, or both, to prevent further weight loss. In fact the restoration of the few pounds lost in the initial weeks of treatment may be warranted.

(3) *For underweight patient.* The initial diet for the *undernourished adult diabetic patient* approximates 35 calories per kilogram of the standard not actual weight. When the weight reaches a point about 5 or 10 pounds (2 to 4 kilograms) below the standard level, small successive decreases in the total calories, sufficient to prevent further gain, should be made. Behavior of the weight level from month to month will dictate further changes in caloric value of the diet. The ultimate aim for adult diabetic patients is to keep the body weight about 4 to 10 pounds below the standard weight.

*e. FAT CONTENT.* The fat quota is automatically accounted for after the protein, carbohydrate, and total calories have already been decided upon. Fats are scheduled merely to make up the balance of calories not provided for by the protein and carbohydrate, and to add variety.

*f. DISTRIBUTION OF MEALS.* As an aid in planning meals the daily division of the diet is adjusted to the individual patient’s needs: (1) For the patient having a mild diabetes and not requiring insulin the diet is divided into three equal meals. (2) For the patient taking a single dose of protamine zinc insulin, one-fifth of the carbohydrate is given for breakfast, two-fifths for lunch, and two-fifths for the evening meal with a small portion of the evening

meal (10 to 20 gm of carbohydrate) held over and taken on retiring. (3) For the patient taking a dose each of crystalline and protamine zinc insulin before breakfast, with or without a dose of crystalline insulin before the evening meal the diet is divided into three equal meals, but a part of the noon meal, usually the fruit, is taken at 11 AM and a part of the evening meal is held over and taken at bedtime. This practice reduces the peak loads at meal times, more evenly distributes the intake of carbohydrate and aids in preventing hypoglycemic reactions. Patients taking a daily dose of globin or histone-zinc insulin do best when the insulin is given at least 1 hour before breakfast and the diet is divided as follows: one-fifth for breakfast, two-fifths for the noon meal, and two-fifths for the evening meal, with part of the evening meal, usually a banana, taken at 3 PM. In most cases, further readjustments of the diet may be indicated occasionally to meet new conditions.

*g. SAMPLE DIETS.* Hospital diets are presented below for three types of patients commonly encountered: obese, average, and thin or undernourished:

(1) Obese diabetic patient, female, aged 45 years, height 5 feet 3 inches (157 cm), weight 200 pounds (91 kg) standard weight, 63 kilograms.

*Diet:* Protein ..... 65 gm  
(Approximately 1 gm per kg of  
standard weight.)

Carbohydrate ..... 110 gm

Fat ..... 58 gm

Total calories ..... 1,134

(18 calories per kg of standard  
weight.)

(2) Diabetic patient, male, aged 39 years, height 5 feet 10 inches (177 cm), weight 167 pounds (76 kg). Standard weight 76 kg.

*Diet:* Protein ..... 75 gm  
(Slightly less than 1 gm per kg.)

Carbohydrate ..... 150 gm

Fat ..... 111 gm

Total calories ..... 1,900

(Approximately 25 per kg.)

(3) Undernourished adult diabetic female, aged 21 years, height 5 feet 6 inches (165 cm), weight 105 pounds (48 kg), standard weight 133 pounds (60 kg).

*Diet:* Protein ..... 60 gm  
(1 gm per kg standard weight.)

Carbohydrate ..... 180 gm

Fat ..... 151 gm

Total calories ..... 2,100

(35 calories per kg of standard  
weight.)

## 88. Diet Treatment in Complications of Diabetes

During any acute infections the diet requires some modification. The protein component (1 gm per kg proper body weight) should not be changed, though a lower intake ( $\frac{2}{3}$  of gm per kg) might be justified for a few days only. The daily *carbohydrate intake is increased* over the diet for the uncomplicated diabetic patient by 50 to 150 grams to total 200–300 grams, but the *fat is reduced* to 40 or 50 grams a day. By these means the caloric requirements are satisfied and the danger of ketosis is minimized. Liquid nourishment may be all that the acutely ill patient can take, and this should consist chiefly of fruit juices, skimmed milk, cream, gruel, eggs, ginger ale, and glucose. The daily division of the diet will depend as before upon the plan of insulin administration. A satisfactory procedure during the course of mild or moderately severe infections is that of dividing the diet into four equal nourishments given at exactly 6 hour intervals. In more severe complications and for patients recovering from diabetic coma, six equal nourishments are given spaced 4 hours apart as shown in schedule at end of this chapter. The insulin (crystalline) is likewise divided into four or six equal amounts as the case may be and is given before each nourishment. The patient's normal diet and insulin dosage is resumed when the acute episode subsides.

## 89. Insulin

No attempt will be made here to describe the various types of insulin and methods of administration. What should be remembered is that diabetic treatment with insulin consists in balancing the intake of the drug against the blood sugar level. A patient must understand the danger of omitting his prescribed insulin as well as the possibility of taking too much. In some emergencies, when a patient who has taken a dose of insulin and then misses a meal, a quick source of carbohydrate is vital. A lump of sugar or a piece of bread may do, but preferably nourishment in liquid form can be given over a period of several hours.

## 90. Training Patient in Diet Computation

*a.* The patient must be taught that translating a diet prescription into amounts of actual foods actually is very simple, although it may appear complicated. The diabetic diet should be as nearly like the normal one as possible. It should be relatively simple to plan and to prepare. This will not indicate to him that he may eat whatever he desires, but it will allow him to adhere to his diet in ordinary life



and not become conspicuous by his abnormality. To set up a daily menu plan first for inclusion of the prescribed carbohydrate, then plan the protein, and finally complete the allotment of calories with fat plus adequate amounts of vitamins and minerals.

*b.* The diet outline in paragraph 87*g*(2) above would be planned by dividing into thirds the totals there given; the result is 50 grams of carbohydrate, 25 grams of protein, and 37 grams of fat for each meal. Various foods are then selected to provide these amounts. Under special conditions uneven distribution of the diet may be indicated as already discussed in this chapter.

(1) A typical menu for breakfast lists fruit, cereal, milk, eggs, toast, butter, cream, and coffee. The quota for carbohydrate will be filled first by including an adequate serving of cereal, milk, and toast. These foods provide 36 grams of carbohydrate. (See the menu below.) The balance, 14 grams, can almost be made up by adding 100 grams of 12 percent carbohydrate fruit. (See table 13B of the app.) A slight excess or shortage of the total is permissible if the day's total does not vary more than 1 or 2 grams.

(2) The protein quota is completed next by adding two eggs, which contain 13 grams of protein, to the amount of protein present in the cereal, milk, and toast.

(3) The quota of fat is completed by totaling the amount present in the milk and eggs (16 grams), adding 20 grams of cream for coffee (4 grams fat)

and making up the remainder with butter. One average square of butter (2 teaspoons) weighs 10 grams and contains about 8.1 grams of fat. Therefore, 17 grams of fat or 2 pats of butter will complete the amount of fat needed for breakfast. This menu can easily be varied by substituting the kind of fruit, style of eggs, and type of cereal, etc.

(4) Dinner and supper are planned in the same manner.

## 91. Diets for Diabetic Children

*a.* A satisfactory method of computing diets for diabetic children has been recommended by White. It is, in general, as follows:

One thousand calories are allowed for a child 1 year old and 100 calories are added for each year until the completion of growth. The maximum for girls should not exceed 2,200 calories and for boys 2,900 calories.

*b.* The diets contain carbohydrate, protein, and fat in the following respective gram ratios: 2.0 : 0.9 : 1.0. In other words, for every 2 grams of carbohydrate, 0.9 grams of protein and 1 gram of fat is prescribed. This makes for the utmost simplicity in the actual construction of the diets as the prescribed figure for carbohydrate is 10 percent of the figure for the total calories. For example, in prescribing a diet for a boy or girl aged 9 years, 1,800 calories are allowed comprising: carbohydrate, 180 grams; fat, 90 grams; and protein approximately 80 grams.

*Sample menu for diabetics*

Prescription: C=150 gm.; P=75 gm.; F=111 gm.;  
Cal=1,900

*Breakfast:*

	Household Measurement	Amount in grams	CHO	Pro.	Fat
12% fruit .....	.....	100	12.0	.....	.....
Cereal, dry .....	½ cup	20	16.0	3.0	.....
Milk, whole .....	½ glass	100	5.0	3.0	4.0
Eggs .....	2 each	.....	.....	13.0	12.0
Toast, whole wheat .....	1 average slice	30	15.0	3.0	.....
Butter .....	2 pats	20	.....	.....	17.0
Cream .....	1½ tb.	20	.....	.....	4.0
Coffee .....	Any amount	.....	.....	.....	.....
Total .....	.....	.....	48.0	22.0	37.0

*Dinner:*

	Household Measurement	Amount in grams	CHO	Pro.	Fat
Broth or bouillon .....	Any amount	.....	.....	.....	.....
Lean roast beef or substitute .....	2½ oz.	75	.....	18.0	5.0
9% vegetable .....	½ cup	100	9.0	.....	.....
6% vegetable .....	½ cup	100	6.0	.....	.....
3% vegetable salad .....	¾ cup	150	4.5	.....	.....
Bread, whole wheat .....	½ average slice	15	7.5	1.5	.....
Butter .....	2¾ pats	27	.....	.....	22.0
12% fruit .....	.....	100	12.0	.....	.....
Milk .....	½ pint	240	12.0	7.0	10.0
Total .....	.....	.....	51.0	26.5	37.0

*Supper:*

	Household Measurement	Amount in grams	CHO	Pro.	Fat
Broth or bouillon .....	Any amount	.....	.....	.....	.....
Lean roast beef or substitute .....	2½ oz.	75	.....	18.0	5.0
9% vegetable .....	½ cup	100	9.0	.....	.....
6% vegetable .....	½ cup	100	6.0	.....	.....
3% vegetable .....	¾ cup	150	4.5	.....	.....
Bread, whole wheat .....	½ average slice	15	7.5	1.5	.....
Butter .....	2¾ pats	27	.....	.....	22.0
12% fruit .....	.....	100	12.0	.....	.....
Milk .....	½ pint	240	12.0	7.0	10.0
Total .....	.....	.....	51.0	26.5	37.0
Total for the day .....	.....	.....	150.0	75.0	111.0

For computing diabetic diet menus consult tables 13A and 13B of the appendix, which classify vegetables according to percentage of carbohydrate.

Most diabetic patients do well, without weighing their food, by measuring their diets with household measures, that is, teaspoon,

tablespoon, cup, and standard helpings, such as one shredded wheat biscuit, three strips of bacon, one square of butter, one or two slices of bread, etc. Diabetic patients must be taught the equivalent of weighed portions in ordinary household measurements.



## SPECIAL DIET FOR ACUTE COMPLICATIONS OF DIABETES MELLITUS

*Liquid diet (six equal feedings)*

	Gram	Protein	Fat	Carbohydrate
8 AM:				
{ Skimmed milk .....	180	5.3	....	9
{ Cereal gruel (dry wt.) .....	20	3	....	16
{ Butter .....	6	....	5	....
{ Orange juice .....	140	....	....	17
	....	8.3	5	42
12 PM:				
Soup { Broth .....	120	0	0	0
{ Egg .....	50	7	5	....
{ Gelatin .....	3	2.5	....	....
{ Grape juice .....	200	....	....	36
{ Lactose .....	5	....	....	5
	....	9.5	5	41
4 PM:				
{ Ginger ale .....	100	....	....	16
{ Pineapple juice .....	100	....	....	12
{ Skimmed milk .....	240	7	....	12.5
{ 20 percent cream .....	30	1	6	1
	....	8	6	41.5
8 PM:				
Soup { Skimmed milk .....	240	7	....	12.5
{ Carrot puree .....	50	1.5	....	4.5
{ Butter .....	6	....	5	....
{ Grapefruit juice .....	270	....	....	24
	....	8.5	5	41.0
12 AM:				
{ Skimmed milk .....	100	3	....	5
{ 20 percent cream .....	30	1	6	1
{ Orange juice .....	200	....	....	24
{ Egg white .....	35	4	....	....
{ Glucose .....	12	....	....	12
	....	8	6	42
4 AM:				
{ Grape juice .....	160	....	....	29
{ Skimmed milk .....	240	7	....	12.5
{ 20 percent cream .....	30	1	6	1
	....	8	6	42.5
	Total grams	50.3	33.0	250.0

## DIETS FOR GENERALIZED METABOLIC DISORDERS

## Section I. AVITAMINOSES

## 92. General

*a.* The most frequent cause of nutritional deficiency disease is a decreased intake of vitamins, though many persons develop deficiency diseases because of faulty assimilation or because of an abnormally high requirement. Excessive exercise precipitates clinical manifestations of deficiency diseases, and acute infections and fever place a still greater demand for vitamins upon the body. Another consideration of significance to the Army is that hot, tropical climates, coupled with excessive activity, raise vitamin requirements, especially of the B group. Vitamin deficiencies are corrected by—

(1) The administration of the substances in adequate amounts to correct the deficiencies.

(2) The elimination of conditions requiring excess requirement for the vitamins.

(3) The treatment of coexisting diseases. Although a dramatic therapeutic response follows the administration of synthetic vitamins, they cannot replace an adequate diet. Supplementary vitamins should be recommended only until an adequate and well-balanced diet can be procured and until all evidences of the deficiencies disappear.

*b.* Menus for diets high in a specific vitamin, or in all vitamins, may be readily computed by consulting the basic table of food composition (table 17 in the app.), in which are listed the various foods and their vitamin content values. Reference should also be made to tables I and II. Where dealing with exceedingly small quantities, such as indicated for the vitamins, it must be remembered that errors may easily enter into calculations for large amounts of food. As emphasized in chapter 3, vitamin data values are approximate only. To be safe in planning diets the levels required should be surpassed

by at least 10 percent. A double check should be made by computing amounts before and after cooking.

## Section II. ACID AND BASE-PRODUCING DIETS

## 93. General

Foods utilized by the body may be classified into those which are especially base-producing, those which produce an acid residue, and those which result in a neutral residue. From the standpoint of the blood alkali-acid balance, it is important to know which foods are predominantly base-producing and which are predominantly acid-producing. There is some division of opinion about the value of base and acid producing diets in the practice of medicine. However, for purposes of completeness and for those clinicians who find use for them, they have been included.

## 94. Alkaline Residue (or base-producing) Diet

Not a small number of clinicians believe that diets predominantly basic have been of value in treating chronic nephritis and other conditions in which a mild acidosis is found. In preparing menus for the high alkaline diet, foods may be selected from the list presented below. In general, fruits and vegetables, with a few exceptions, yield basic elements. Neutral residue-producing foods, notably butter, cream, olive oil, vegetable fats, lard, cornstarch, sugar, and tapioca, may be used if here desired, but not in sufficient quantity to reduce adequate intake of the high alkaline foods. If any predominantly acid-producing foods are used, they should be limited to the minimum, and only those with low acid values are permissible. Predominantly base-producing diets tend to be low in the B vitamins, hence fortification in this respect may be necessary.



## BASE-PRODUCING DIET

## Food selection

Food	Permitted	Avoid
Bread, cereals, etc. ....	Cornstarch and tapioca.	All others.
Fruit .....	Almonds, apples, bananas, cherry juice, coconuts, currants, dates, figs, grape juice, grapefruit juice, lemons, oranges, peaches, pears, pineapple, pineapple juice, raisins, raspberry juice.	Prunes, plums, cranberries.
Vegetables .....	Asparagus, brussels sprouts, beans, dried; beans, lima, fresh; beet greens, cabbage, carrots, cauliflower, celery, cucumber, lettuce, mushrooms, onions, parsnips, peas, dried or fresh; potatoes, radishes, rutabagas, turnips, spinach, tomatoes, tomato juice.	Corn.
Miscellaneous ..	Milk, cow's; molasses, chestnuts.	

## SAMPLE MENU

Breakfast	Dinner	Supper
Baked apple. Cream. Pineapple juice. Bacon. Toast, 1 slice. Milk.	Orange juice. Creamed asparagus. Baked potato. Pineapple-lettuce salad, mayonnaise. Butter. Sliced pears. Milk.	Tomato juice. Mashed potatoes. Butter. Creamed spinach. Sliced peaches. Milk.

## 95. Acid-Ash Diet

This diet is employed to furnish an adequate diet with a high vitamin content and one in which the total acid-ash exceeds the total basic-ash. In addition to a careful selection of foods, it is essential that NO SALT be used for seasoning, either in cooking or at the table. In general, cereals, meats, and fish are

predominantly acid-producing foods. The following foods, in the amounts designated, must be included in the diet daily.

Acid-Ash Foods  
(Minimum daily amounts)

*I. Cereal*—Any one of the following measured servings (2 cc excess acid-ash) :

	Amount
Cornflakes .....	1 cup heaping
Cornmeal (cooked) .....	$\frac{2}{3}$ cup
Farina (cooked) .....	$\frac{2}{3}$ cup
Oatmeal (cooked) .....	$\frac{1}{2}$ cup
Puffed wheat .....	1 cup scant
Puffed rice .....	1 cup heaping
Rice (cooked) .....	$\frac{1}{2}$ cup scant
Shredded wheat .....	$\frac{1}{2}$ biscuit

*II. Meat*—Any two of the following measured servings (12 cc each) :

	Amount
Beef, loin, med. fat .....	4" x $\frac{1}{2}$ "
Chicken, broiled .....	one-half
Chicken, stewed .....	breast or thigh plus leg
Cheese cheddar .....	3 $\frac{1}{2}$ " x 2" x 1"
Codfish, fresh, cooked .....	$\frac{1}{4}$ cup
Frankfurters, large .....	2
Halibut .....	4" x 2" x 1"
Ham, fresh .....	4 $\frac{1}{2}$ " x 3" x $\frac{1}{4}$ "
Heart, beef .....	2 $\frac{1}{2}$ " x 3" x 1"
Kidney, veal .....	$\frac{3}{4}$ cup
Lamb, chop .....	3 med. size
Lamb, roast .....	5" x 5" x $\frac{1}{4}$ "
Liver, beef .....	3" x 6 $\frac{1}{2}$ " x $\frac{1}{2}$ "
Mackerel, fresh .....	2" x 4" x 1"
Oysters, very large .....	3
Pork chop, thick .....	1
Salmon, fresh .....	3" x 4" x $\frac{3}{4}$ "
Salmon, canned .....	$\frac{1}{2}$ cup packed
Trout .....	2 $\frac{1}{2}$ " x 3" x 1"
Turkey, 2 slices .....	2" x 3" x $\frac{1}{4}$ "
Veal chop .....	1
Veal roast .....	3" x 2 $\frac{1}{2}$ " x $\frac{1}{8}$ "
White fish .....	2 $\frac{1}{4}$ " x 3" x 1"

*III. Bread*—Whole Wheat—5 slices (2.2 cc ea.)

*IV. Eggs*—two (5.5 cc ea.). Additional eggs may also be served in lieu of a meat item from group II above.

V. *Miscellaneous*—any one of the following measured servings (2 cc)

	Amount
Macaroni .....	¾ cup
Spaghetti .....	½ cup
Rice .....	½ cup
Corn .....	½ cup
Plain cake .....	1¾" x 1¾" x 1½"

#### Alkaline-Ash Foods (Maximum amount permitted)

Milk: one pint (7.2cc); Cream: ½ cup (0.3cc)  
and Fruits and Vegetables: not to exceed 25cc from list given below:

(Additional vitamins recommended:)

Yeast—2 cakes

Cod liver oil 2 tablespoons: or Haliver oil 2 capsules before each meal

Wheat germ—2 tablespoons to be added to cereal.

#### MAXIMUM FRUIT AND VEGETABLE ALLOWANCES

Fruit	Amount	cc of excess basic ash
Watermelon .....	2½" x 2½" x ½"	2.7
Grapes .....	½ Cup of 24 grapes	2.7
Pear .....	1 Medium	3.6
Apple .....	1 Small	3.7
Grape juice .....	½ Cup	3.9
Lemon juice .....	½ Cup	4.1
Cherry juice .....	½ Cup	4.4
Orange juice .....	½ Cup	4.5
Raspberry juice .....	½ Cup	4.9
Peach .....	1 Medium	5.0
Lemon .....	1 Medium	5.5
Banana .....	¾ Cup or ½ large	5.6
Orange .....	1 Medium	5.6
Cherries .....	⅔ Cup	6.1
Apricots .....	2 Medium	6.8
Pineapple .....	⅔ Cup diced	6.8
Mushmellon .....	½ Cup	7.5
Rhubarb .....	½ Cup	8.6

Vegetable	Amount	cc of excess basic ash
Asparagus .....	½ Cup	0.8
Green Peas .....	¾ Cup	1.3
Onions .....	2 Cup	1.5
Pumpkins .....	½ Cup cooked	1.5
Turnips .....	½ Cup cooked	2.7
Squash .....	½ Cup mashed	2.8
Radishes .....	10	2.9
Mushrooms .....	½ Cup canned	4.0
Cauliflower .....	⅔ Cup cooked	5.3
String beans .....	⅔ Cup cooked	5.4
Tomatoes .....	½ Cup	5.6
Cabbage .....	⅔ Cup cooked, 1½ raw	6.0
Tomato juice .....	½ Cup	6.2
Sweet potato .....	½ Medium size	6.7
White potato .....	1 Potato 2½" diameter	7.0
Lettuce .....	¼ Head or 16 leaves	7.4
Celery .....	4 Stalks or ¾ cup	7.8
Cucumber .....	⅓ Cup sliced	7.9
Rutabagas .....	½ Cup mashed	8.5
Carrots .....	⅝ Cup	10.8
Beets .....	⅔ Cup	10.9

In addition, the following *acid* and neutral foods may be used as *desired*:

Acid foods	Neutral foods
Cranberries*	Sweet butter
Flour	Candy—no
Plain cookies	chocolate bars
Pastry with cus-	Cornstarch
tard or allowed	Lard
amounts of	Olive oil
fruit fillings	
English walnuts	
Popcorn—no	
salt	
Unsalted	
peanuts	
Unsalted	
crackers	
	Mayonnaise
	Sugar
	Tapioca
	Tea
	Coffee

\* The ash of this food is alkaline, but because of contained substances which form hippuric acid in the body, they increase the acidity of the urine.

The following list contains a few striking examples of foods which must be omitted because of their extremely high basic-ash content.

Almonds	Olives
Beet greens	Parsnips
Dandelion greens	Raisins
Figs	Spinach
Molasses	Dried fruits and vegetables



# SAMPLE DIETS ACID FORMING

	Equivalents	
	Total acid Per 100 Gm.	Total base Per 100 Gm.
<i>Breakfast</i>		
Sliced orange		5.6
Sugar, 2 tsp., 10 gms.		
Oatmeal, $\frac{1}{3}$ c. cooked, 15 gms.	1.8	
Milk, $\frac{1}{2}$ c., 120 gms.		2.1
Toast, 2 slices, 60 gms.	4.2	
Butter, 1 square, 10 gms.	0	0
Eggs, 2100 gms.	11.0	
Totals	17.0	7.7
<i>Lunch</i>		
Broiled hamburger steak, 2 medium balls, 100 gms.	12.1	
Stewed corn, $\frac{3}{8}$ c., 100 gms. with cream, 2 tbsp., 30 gms.	1.8	0.2
Lettuce heart, $\frac{1}{2}$ medium, 40 gms.		2.0
French dressing, 1 tbsp., 15 gms.		
Bread, 2 slices, 60 gms.	4.2	
Butter, 1 square, 10 gms.	0	0
Pear, 1 medium		3.6
Totals	18.0	6.7
<i>Dinner</i>		
Roast lamb, 2 slices, 100 gms.	9.6	
Cranberry jelly, 1 tbsp., 15 gms.	?	
Steamed rice, $\frac{1}{2}$ c., (30 gms. dry wt.)	2.8	
Onions, 2 medium, 65 gms.		0.9
String beans, $\frac{2}{3}$ c.		5.4
Bread, 2 slices, 60 gms.	4.2	
Butter $1\frac{1}{2}$ squares, 15 gms.	0	0
Tapioca pudding made with 1 egg, $\frac{1}{2}$ c. milk, $\frac{1}{4}$ c. cream, $\frac{1}{4}$ c. cooked Tapioca (neutral). 2 tsp. sugar (neutral)	3.1	
Totals	19.7	6.3
Total acid	54.7	
Total base		20.7
Balance	34.0	

Excess of acid over base equivalent to over 34 cc. normal acid.  
Best to keep over 35 cc.

## Section III. CALCIUM MODIFICATIONS

### 96. High Calcium Diet

a. General. Calcium in amounts higher than are contained in normal diets is indicated in the post-operation care of certain large wounds and non-healing fractures of the long bones. It is also necessary for Parathyroid deficiency, malnutrition, in the treatment of rickets, and for the prenatal patient and during lactation. The diet is supplemented with vitamin D in the treatment of rickets, and there is evidence that vitamin C in liberal amounts influences favorably the utilization of calcium. Diets high in calcium content are employed in correcting the acute manifestations of chronic lead poisoning.

b. A high calcium intake is assured by providing in the diet foods which are rich in this mineral. Milk and cheese are especially valuable in this respect. Further selection of suitable foods may be made by consulting appendix tables 9 and 17 in which are listed the foods having a high calcium content.

### 97. Low Calcium Diet

This diet is sometimes useful in the later "delead-ing" process in chronic lead poisoning. This action may be somewhat accelerated by a diet providing a high acid residue. Because of danger of too rapid mobilization of lead already deposited in the bones the diet must be used with caution and only under direction of a medical officer. Since ordinary drinking water may contain relatively large amounts of calcium, patients receiving this form of therapy should drink distilled water instead. Selection of foods with low calcium contents will be facilitated by consulting tables 9 and 17 in the appendix.

## Section IV. KETOGENIC DIETS

### 98. General

a. Ketones are a normal product of fat metabolism. Their production may be increased greatly by reducing the carbohydrate content of the diet. An increased metabolism of fat ensues. As these processes are increased, the amount of ketones produced exceeds the rate of their oxidation to such

an extent that they accumulate in the blood and appear in the urine. The same effect follows a period of fasting. Ketogenic diets expose the patient to avitaminosis unless counter measures are taken.

b. The diet prescription, in general, is as follows:

*Total calories:* Adults; 35 calories per Kg. of body weight. Children; 65 to 70 calories per Kg.

*Carbohydrate:* 10 to 20 grams daily.

*Protein:* Adults; 1 gm. per Kg. Children; 3 gm. per Kg.

*Fat:* Sufficient to provide calories not accounted for in carbohydrate and protein quotas.

This diet is high in fat content, extremely low in carbohydrate, with adequate calories and protein.

## 99. Treatment

The treatment is initiated by a week of fasting. Water, broths, and wafers free of food value are allowed. The ketogenic diet is then begun and continued for approximately 3 months. With a favorable response, the carbohydrate allowance is gradually increased to 50 grams daily. Subsequent increases of 5 grams of protein and carbohydrate are made each month. Appropriate reductions in fat are made to keep the total caloric value of the diet at the optimum level.

The ketogenic diet is now used less frequently in treatment for chronic pyelonephritis. It may, however, be employed with advantage as a supplement to other measures for this disease.

Ketosis produced by alterations in diet has been found effective in controlling epileptic seizures in children and in very young adults.

## KETOGENIC DIET\*

Diet prescription: Protein 70 Gm., Carbohydrate 20 Gm., Fat 232 Gm. Total Calories 2448.

<i>Breakfast</i>	<i>Amount in grams</i>	<i>CHO</i>	<i>PRO</i>	<i>FAT</i>
Tomato juice	100	3.0	...	...
Eggs, fried	Two	..	13.0	12.0
Bacon	20	..	3.3	10.0
Cellu wafers	Any amount	..	...	...
Butter	30	..	...	24.3
Cream 20%	75	2.3	1.6	30.0
Coffee	Any amount	..	...	...
		5.3	17.9	76.3 gm.

<i>Dinner</i>	<i>Amount in grams</i>	<i>CHO</i>	<i>PRO</i>	<i>FAT</i>
Broiled salmon with	90	..	19.6	11.5
Lemon butter	20	..	...	16.2
Asparagus tips	100	3.0	...	...
3% Green salad	65	2.0	...	...
French dressing	20	..	...	13.0
Cellu wafers	Any amount	..	...	...
Butter	20	..	...	16.2
Dessert:				
Fresh strawberries in	50	3.0	...	...
D-Zerto	1 serv	..	2.0	...
Cream, pastry	50	1.5	1.1	20.0
Coffee	..	..	...	...
Total		9.5	22.7	76.9 gm.

<i>Supper</i>				
Broiled steak	100	..	20.0	20.0
Butter	20	..	...	16.2
String beans	65	2.0	...	...
Lettuce	50	1.5	...	...
Mayonnaise	10	..	...	7.5
Cellu wafers	Any amount	..	...	...
Custard:				
Egg	One	..	6.5	6.0
Cream 20%	75	2.3	1.6	30.0
Saccharine		..	...	...
Tea	Any amount	..	...	...
Total		5.8	28.1	79.7
Day's total		20.6	68.7	232.9 gm.

\* Diet calculated for a male weighing 70 kilograms.

## Section V. LOW PURIN DIET

### 100. General

a. The low purin diet has its field of usefulness in the treatment of gout. In this condition there is usually to be found an abnormal increase in the uric acid content of the blood. Whether this is because of retention of uric acid by the kidneys or an increased production is undecided. Nevertheless, the source of uric acid will be reduced by employing a diet low in, or free from, purins, which are found chiefly in meat and fish products. A restriction in the total calories is usually indicated also as most gouty patients are overweight. The protein allowance should not exceed 1 gm. per kg. of the standard body weight. It is important that the patient be



trained in the selection of his foods and impressed of the necessity of adhering to dietary restrictions for the remainder of his life. The practice of consuming abundant quantities of water is to be encouraged.

b. In the following sections are given a Food Selection Table and groups of food yielding differing amounts of purin bodies. Those in groups A and B should be avoided. Following is a sample weekly menu for a low purin diet.

### LOW PURIN DIET

#### Food selection

Food	Permitted	Avoid
Fruit .....	All.	None.
Vegetables .....	All except those listed in next column.	Lentils, spinach, peas, beans, cauliflower, asparagus, mushrooms, rhubarb.
Cereal .....	All except those in next column.	All from whole grain.
Bread .....	All except those in next column.	All made from whole grain.
Soup .....	All except those in next column.	All broths and those made from meat.
Meat and substitutes ...	Eggs, shad roe, caviar, cheese, gelatin, milk.	Avoid all as listed below.
Butter .....	All.	None.
Beverage .....	Milk, coffee, tea.	None.

### PURIN CONTENT OF CERTAIN FOODS\*

#### A. Foods which contain very large amounts (150-100 mg.) of purin bodies in 100 gms.

Sweetbreads .....	825 mg.
Anchovies .....	363 mg.
Sardines in oil.....	295 mg.
Liver (calf, beef).....	160-400 mg.
Kidney (beef) .....	200 mg.
Brains .....	195 mg.
Meat extracts .....	160-400 mg.
Gravies .....	Variable

#### B. Foods which contain a large amount (75 to 150 mg.) of purin bodies in 100 gm. Bacon, beef, calf tongue, carp, chicken soup, codfish, duck, goose, halibut, lentils, liver sausage, meat soups, partridge, perch, pheasant, pigeon, pike, plaice, pork, quail, rabbit, sheep, shellfish, squab, trout, turkey, veal, venison.

#### C. Foods which contain a moderate amount (up to 75 mg.) of purin bodies in 100 gm. Asparagus, bluefish, bouillon, cauliflower, chicken, crab, eel, finnan haddie, ham, herring, kidney beans, lima beans, lobster, mushrooms, mutton, navy beans, oatmeal, oysters, peas, salmon, shad, spinach, tripe, tuna fish, whitefish.

Also whole grain bread and breadstuffs: Graham bread, graham crackers, rye bread, rye krisp, whole wheat bread.

Also whole grain cereals: Bran, bran flakes, cracked wheat, graham porridge, malt breakfast food, bran flakes, rolled wheat, puffed wheat, shredded wheat, wheat flakes.

#### D. Foods which contain an insignificant amount of purin or no purin:

##### 1. Beverages:

Carbonated	Coffee
Chocolate	Fruit juices
Cocoa	Tea

##### 2. Butter†

##### 3. Breads and breadstuffs (except whole grain under list 3)

Butter thins	Rusk
Corn bread	Soda crackers
Corn sticks	Water rolls
French bread	White bread
Gluten bread	Zwieback

##### 4. Caviar

##### 5. Cereals (except whole grain under list 3)

Refined wheat cereal	Grits
Puffed rice	Rice flakes
White cornmeal	Rice krispies
Cornflakes	

##### 6. Miscellaneous cereal products:

Arrowroot	Hominy
Macaroni	Noodles
Sago	Spaghetti
Tapioca	Vermicelli

##### 7. Cheese of all kinds†

##### 8. Eggs

##### 9. Fats of all kinds (but eat in moderation)†

##### 10. Fruits of all kinds

##### 11. Gelatin

##### 12. Milk

Buttermilk Condensed milk Malted milk

##### 13. Nuts of all kinds†

Peanut butter†

##### 14. Pies (except mincemeat)

##### 15. Shad roe

\* To calculate the purins of "purin bodies" in a given food the purine nitrogen is multiplied by 3: example, 200 gm. of purine nitrogen equals 600 gm. of purin bodies.

† These foods are high in fat.

## 16. Sugar and sweets

## 17. Vegetables:

Artichokes	Brussels sprouts	Endive
Beet greens	Corn	Potato:
Cabbage	Cucumber	sweet,
Lettuce	Kohlrabi	white
Parsnips	Rutabagas	Turnips
Carrots	Swiss chard	Dandelion greens
Beets	Eggplant	Summer squash
Broccoli	Pumpkin	String beans
Celery	Sauerkraut	
Okra	Tomato	

18. Vegetable and cream soups (to be made with allowed vegetables and without meat stock.)

## 19. Vitamin concentrates

## 20. Cod liver oil

Halibut oil

Yeast

*Sample weekly menu for low purin diet.*

Breakfast	Dinner	Supper
<i>First day</i>		
Orange halves. Cream of wheat. Soft cooked egg. White toast. Butter. Choice of beverage.	Creamed potato soup. Shad roe. Potato puff. Stewed tomatoes. Swiss chard. Bread—1 slice. Butter—1 square. Fruit cup. Milk.	Creamed carrot soup. Macaroni and cheese. Beets. Cucumbers in vinegar. Bread—1 slice. Butter—1 square. Blueberry pie. Milk.
<i>Second day</i>		
Applesauce. Cornflakes. Poached egg. White toast. Butter. Choice of beverage.	Creamed vegetable soup. Escalloped egg plant casserole. String beans. Whole kernel corn. Bread—1 slice. Butter—1 square. Pear halves. Milk.	Fruit juice. Breaded egg cutlet. Baked potato. Tomato salad. Roll—1. Butter—1 square. Ice cream. Milk.

*Sample weekly menu for low purin diet—Continued*

Breakfast	Dinner	Supper
<i>Third day</i>		
Grapefruit halves. Cream of wheat. Scrambled egg. White toast. Butter. Choice of beverage.	Creamed corn soup. Egg omelet with jelly. Mashed potatoes. Broccoli. Beets. Bread—1 slice. Butter—1 square. Fresh fruit. Milk.	Creamed rice soup. Escalloped oysters. Squash. Braised celery. Pear and gelatin salad. Bread—1 slice. Butter—1 square. Fresh strawberries. Milk.
<i>Fourth day</i>		
Banana. Rice flakes. Soft cooked egg. White toast. Butter. Choice of beverage.	Fruit juice. Baked whitefish. String beans. Turnips. Bread—1 slice. Butter—1 square. Ice cream. Milk.	Creamed celery soup. Baked stuffed tomato. Hominy grits. Pineapple and apricot salad. Bread—slice. Butter—1 square. Jelly roll. Milk.
<i>Fifth day</i>		
Peach halves. Corn meal mush. Poached egg. White toast. Butter. Choice of beverage.	Creamed potato soup. Baked egg and noodles au gratin. Beets. Cabbage. Bread—1 slice. Butter—1 square. Fresh fruit. Milk.	Creamed carrot soup. Baked spaghetti with tomato sauce. Carrots. Cole slaw. Hard roll—1. Butter—1 square. Prune whip with custard sauce. Milk.
<i>Sixth day</i>		
Orange halves. Cream of wheat. Scrambled egg. White toast. Butter. Choice of beverage.	Creamed tomato soup. Roast chicken. Rice. Brussel sprouts. Squash. Celery and olives. Bread—1 slice. Butter—1 square. Ice cream. Milk.	Fruit juice. Assorted sliced cheese. Baked potato. Egg and beet salad. Bread—1 slice. Butter—1 square. Fruit gelatin. Milk.



*Sample weekly menu for low purin diet—Continued*

Breakfast	Dinner	Supper
<i>Seventh day</i>		
Stewed prunes. Puffed rice. Soft cooked egg. White toast. Butter. Choice of beverage.	Creamed potato soup. Macaroni and cheese. String beans. Parsnips. Bread—1 slice. Butter—1 square. Baked apple. Milk.	Creamed vegetable soup. Baked corn pudding. Grilled tomatoes. Braised celery with peanuts. Cucumber salad. Bread—1 slice. Butter—1 square. Sherbet. Milk.

## Section VI. DIET IN TREATMENT OF ADDISON'S DISEASE

### 101. General

*a.* A return to a normal electrolyte balance is achieved for patients suffering from Addison's disease by appropriate treatment with desoxycorticosterone.

With this improvement in therapy, the need for diets low in potassium content has disappeared. Also, the salt content of the normal or special diet may be adequate for these patients, though supplementary amounts are sometimes indicated. A small proportion of patients having chronic adrenal gland insufficiency are maintained in relatively good health by means of sodium chloride therapy. For these patients, exact amounts, usually 3 to 6 grams daily, of sodium chloride will be prescribed. For those situations where sodium-potassium ratios in the diet are considered important, appendix tables 10, 11, and 12 have been included.

*b.* The disturbance in carbohydrate metabolism resulting from adrenal cortical insufficiency is not corrected by desoxycorticosterone. For this reason a diet high in carbohydrate (Sec. I, Ch. 7) is indicated in the treatment of these patients until adequate supplies of hydroxycorticosterone—the carbohydrate regulating factor—are available for clinical use. Seven to eight grams of carbohydrate per Kg. of body weight usually suffice with an otherwise adequate diet. Between-meal-nourishments are of value, and it is especially advisable to give a liberal carbohydrate allowance at bed time. Foods with slowly available carbohydrate are recommended for this feeding, such as sandwiches, cookies, banana, ice cream, and milk.

## SURGICAL DIETS

## 102. Pre-Operative Diet

*General.* The object of pre-operative diet therapy is to build up the resistance of the patient to withstand the inevitable shock of surgical procedure. Naturally the nature of the operation, the condition of the patient's gastro-intestinal system, and the number of pre-operative days available all affect the dietary plan. Secondly pre-operative diets must prepare patients directly for the operating room, and are, therefore, reduced to a minimum to leave little residue in the intestine and minimize possible vomiting. Since all cases differ, each diet must be planned directly under supervision of the surgeon. Usually a light diet will be ordered the night before the operation. It is better to give only soup, toast, butter, dessert and a beverage. In the case of stomach operations give only broth and fruit juice. Where perforation of the intestinal system is suspected, of course nothing should be given.

## 103. Post-Operative Diet

*After general surgery.* The ideal diet restores normal nutrition gradually and promptly. Under average conditions for normal type patients the schedules below can be followed. Great variations should be expected for battle casualties and all other emergency conditions.

*a. ABDOMINAL CASES, including small and large intestine:*

- (1) First 48 hours—tea, tap water and beef broth as tolerated.
- (2) Third day—Surgical, liquids. (See lists below.)
- (3) Fourth day—Modified surgical, soft.
- (4) Fifth day—Surgical, soft.
- (5) Sixth day—soft.
- (6) Seventh day—light.
- (7) Eighth day—regular.

*b. STOMACH CASES.* Removal of polyps, partial or total gastrectomy, gastric resection:

Follow special gastric routine.

*c. CARCINOMA AND PALLIATIVE PROCEDURES:*

Follow special gastric routine with few additions as tolerated.

*d. HEMORRHOID CASES, RECTAL FISSURES, AND SIMILAR RECTAL OPERATIONS:*

- (1) First 48 hours—tea, broth, water and fruit juice.
- (2) Third day—add cereal gruel.
- (3) Fourth day—same as 3d.
- (4) Fifth day—add baked apple, baked potato, stewed prunes.
- (5) Sixth day—if patient has had a bowel movement, give a light diet. If not, continue as on the 5th day until colon functions; then start with light diet.
- (6) Seventh day—regular diet.

*e. COLOSTOMIES.* See colostomy diet.

*f. GALL BLADDER OPERATIONS.*

- (1) Day of operation: 1st, 2d, 3d day—as ordered by medical officer.
- (2) Fourth day—Semisoft diet. Eliminate milk and cream.
- (3) Fifth day—Soft diet,  $\frac{1}{2}$  pat butter and small amount of cream.
- (4) Sixth day—Same as fifth day.
- (5) Seventh day—Light diet. Regular diet. Fats restricted. (No gravies, fried food, gaseous vegetables, no pastries.)

*g. THYROID CASES.*

- (1) Cold drinks when patient is able to swallow them.
- (2) Soft diet when patient is able to take it.
- (3) Advance to regular diet as soon as patient wants it.

*h. E.N.T. PATIENTS.*

- (1) Tonsil cases—Milk and ice cream evening of day of operation. Soft diet with milk toast and ground meat until patient is able to swallow with some degree of comfort.
- (2) Nasal cases—Milk and ice cream evening of day of operation. Increase patient's diet through



soft, light and regular as patient's condition warrants.

(3) Eye cases—Liquids after operation, increase to light and regular as patient feels better.

i. ORTHOPEDIC CASES. Liquid if patient is not nauseated. Soft regular surgical diets as tolerated.

#### 104. Post-Operative Treatment

The following is a food selection list for the above schedules.

##### a. LIQUIDS.

Broths	Tea	Fruit juices
Bouillon	Coffee	Ginger ale
Beef tea	Wheys	
Beef juice	Albumin	

Liquid diet should be administered every 2 hours from 7 AM to 8 PM.

b. SEMISOFT. Useful in transferring ill cases from liquid to solid foods. Feedings 6 times daily. From 500 to 600 grams at mealtime with 200 cc. between meals may be allowed.

Liquids of all sorts.  
 Broth, thickened, strained.  
 Soups, thickened, strained.  
 Eggs, poached, coddled, soft boiled.  
 Poultry and beef jellies.  
 Cottage cheese.  
 Plain gelatin desserts.  
 Fine cereals.  
 Oatmeal, strained.  
 Tapioca.  
 Junket.  
 Custards.  
 Blanc manges.  
 Plain sherbets.  
 Plain ice cream.

#### SAMPLE MENUS

##### FOR POST-OPERATIVE DIETS

After General Surgery:

##### (1) Third day post-operative routine:

Breakfast	Dinner	Supper
Orange juice	Broth	Broth
Toast	Toast	Toast
Butter	Butter	Butter
Coffee	Tea	Tea

##### (2) Modified surgical soft diet:

Cooked cereals (except very coarse ones), toast, butter, milk and simple desserts.

Breakfast	Dinner	Supper
Puree peach	Broth	Broth
Wheat cereal with cream and sugar	Milk toast Baked custard Tea or milk	Oatmeal with cream and sugar
Toast		Toast
Butter		Butter
Coffee		Cherry gelatin Tea or milk

##### (3) Surgical soft diets:

Add poached eggs and baked potatoes, cottage cheese.

Orange juice	Broth	Broth
Wheat cereal with cream and sugar	Poached egg on toast Ice cream	Baked potato Toast Butter
Toast	Tea or milk	Vanilla pudding
Butter		Tea or milk
Coffee		

#### SAMPLE MENUS

##### (4) Soft diet:

Same as medical soft diet. (See par. 54.)

##### (5) Surgical light diet: (See par. 55.)

Same as medical light diet, omitting uncooked fruits and vegetables with the exception of oranges and grapefruit, and substituting toast for bread.

##### (6) Surgical regular diet: (See sec. II, Ch. 5.)

Same as light medical diet, with the addition of baked ham and roast veal. Bread is used. All gas-forming and highly seasoned foods are omitted.

#### 105. Post-Operative Routine for Gastric Cases

The following feedings may be used after most stomach operations if tolerated. They will also be found useful after resection for carcinoma and other palliative procedures. In the latter cases coffee, tea, broth, fruit juices and carbonated beverages may be allowed. A home diet for these patients may be more lenient.

1st Day P.O. gastric diet: (Fourth or fifth post-operative day.)

8:00 AM	Weak tea without cream.
10:00 AM	Plain flavored gelatin, no cream.
12:00 noon	Strained cream soup, $\frac{1}{2}$ cup.
3:00 PM	Plain flavored gelatin, $\frac{1}{2}$ cup, or milk, 100 cc with limewater, 2 teaspoons.
6:00 PM	Cereal gruel or cream soup, $\frac{1}{2}$ cup.

2d Day P.O. gastric diet:

8:00 AM	Cereal gruel, $\frac{2}{3}$ cup.
10:00 AM	Plain flavored gelatin with cream, or $\frac{1}{2}$ glass milk.

- 12:00 noon Strained cream soup,  $\frac{2}{3}$  cup.  
 3:00 PM Plain flavored gelatin with cream  
 or  $\frac{1}{2}$  glass milk.  
 6:00 PM Cereal gruel, or cream soup,  $\frac{2}{3}$  cup.  
 8:00 PM Plain flavored gelatin with cream  
 or  $\frac{1}{2}$  glass milk.

*3d Day P.O. gastric diet:*

- 8:00 AM Cereal gruel, 1 cup.  
 10:00 AM Plain flavored gelatin with cream,  
 milk and cream, custard or egg  
 nog.  
 12:00 noon Strained cream soup, 1 cup.  
 3:00 PM Same as 10:00 AM.  
 6:00 PM Cereal or rice with cream or cream  
 soup, 1 cup.  
 8:00 PM Same as 10:00 AM.

*4th Day P. O. gastric diet:*

- 8:00 AM Cereal, cream, sugar — 1 egg,  
 poached or soft-cooked — Milk  
 or postum.  
 10:00 AM Plain flavored gelatin with cream;  
 custard, milk and cream, egg  
 nog.  
 12:00 noon Strained cream soup, melba toast,  
 $\frac{1}{2}$  slice, butter  $\frac{1}{2}$  square—  
 Milk or postum.  
 3:00 PM Same as 10:00 AM.  
 6:00 PM Strained cream soup or cereal with  
 cream, rice with cream or milk  
 toast, melba toast,  $\frac{1}{2}$  slice; but-  
 ter  $\frac{1}{2}$  square.  
 8:00 PM Same as 10:00 AM.

*5th Day P.O. gastric diet:*

Same as 4th day with the addition of bland des-  
 sert at dinner and bland fruit puree for sup-  
 per;  $\frac{1}{2}$  slice melba toast for breakfast.

*6th Day P.O. gastric diet:*

Same as 5th day with addition of potatoes, one  
 full slice toast with each meal. Weak choco-  
 late milk may also be used as nourishment.

*7th Day P.O. gastric diet:*

Same as 6th day with addition of vegetable  
 puree.

*8th Day P.O. gastric diet:*

Same as 7th day.

*9th Day P.O. gastric diet:*

Same as 8th with the addition of cottage cheese  
 or egg dish.

*10 and 11th Day P.O. gastric diet:*

Same as 9th day.

*12th Day or Full P.O. gastric diet:*

Same as 11th day with addition of chicken or  
 fish.

*14th Day P.O. gastric diet:*

Add  $\frac{1}{4}$  glass orange juice to be sipped through-  
 out the meal.

*Full P.O. gastric diet:*

- 8:00 AM  $\frac{1}{4}$  glass orange juice—Bland fruit  
 —Cereal with cream and sugar  
 —1 egg, 1 slice melba toast, but-  
 ter—Milk or coffee or tea.  
 10:00 AM Nourishment.  
 12:00 noon Strained cream soup—Meat or sub-  
 stitute — Potato — Vegetable  
 puree — Bland dessert — 1 slice  
 melba toast, butter — Milk or  
 coffee or tea.  
 3:00 PM Nourishment.  
 6:00 PM 1 egg or substitute—Potato or sub-  
 stitute—Vegetable puree—Bland  
 fruit—1 slice melba toast, but-  
 ter—Milk or coffee or tea.  
 8:00 PM Nourishment.

After 6 weeks, tenderloin steak, lamb chops,  
 tender roast beef, tender roast lamb and crisp  
 bacon may be included. At this time it is no  
 longer necessary to puree the vegetables.

**106. Routine for Hemorrhoidectomies, Rectal Fistulas  
 and Fissure Cases**

*First 24 hours*—Hot tea, and hot water.

*Second 24 hours*—Surgical liquids: Hot tea,  
 beef broth, beef tea, fruit juices.

*Third 24 hours*—Oatmeal gruel, fruit juice,  
 small pitcher cream, coffee, tea, strained soup.

*Fourth 24 hours*—Same as above.

Breakfast	Dinner	Supper
<i>Fifth day</i>		
Orange juice.	Broth.	Broth.
Cereal gruel with cream and sugar.	Cereal gruel with cream and sugar.	Cereal gruel with cream and sugar.
Coffee.	Fruit juice, pineapple. Tea.	Fruit juice, grapefruit. Tea or coffee.
<i>Sixth day</i>		
Stewed prunes.	Broth or strained soup.	Broth or strained soup.
Cooked cereal with cream and sugar.	Baked potato with butter.	Buttered rice with cream and sugar.
Fruit juice.	Baked apple.	Stewed prunes.
Tea or coffee.	Fruit juice. Tea or coffee.	Tomato juice. Coffee or tea.

*Seventh day*

If bowels have moved give light diet.



# 107. Post-Operative Diets Restricted in Residue for Colon Cases

a. RESIDUE-FREE LIQUIDS. Fruit juices, strained; tea; coffee; broth; plain flavored gelatins.

b. REGULAR RESIDUE-FREE DIET (Approx. food value, 2300 cal.).

## COLON CASE DIET

### Breakfast

Fruit juice..... as desired  
Egg..... 1  
Arrowroot cookies..... 2  
Butter..... 1 square  
Cream 40 percent..... 4 tablespoons  
Coffee

9:00 AM

Candy, 5 ounces, either pure sugar candy or milk chocolate without nuts.

### Dinner

Broth  
Gelatin, plain flavored..... 2 heaping tablespoons  
Arrowroot cookies..... 2  
Butter..... 1 square  
Fruit juice..... as desired  
Cream 40 percent..... 4 tablespoons  
Tea or coffee

3:00 PM

Fruit juice..... as desired

### Supper

Broth  
Steamed rice..... 2 heaping tablespoons  
Arrowroot cookies..... 2  
Butter..... 1 square  
Fruit juice..... as desired  
Cream 40 percent..... 4 tablespoons  
Tea or coffee

When an increased food intake is desired more of any of the foods listed above may be given, except egg and cream; and the following may be added:

Wheat cereal  
Cottage cheese  
Broiled steak

c. Low RESIDUE DIET (Approx. food value: Protein 60 grams; 2000 cal.).

Diet outline		Sample menu
Breakfast		Breakfast
Orange juice .....	¼ glass	Orange juice
Cereal, bland .....	1 serving	Corn flakes
Cream .....	½ cup	Cream
Bacon .....	2-3 strips	Bacon
Egg .....	1	Poached egg
Toast .....	1 slice	Toast
Butter .....	1 square	Butter
Coffee if desired		Coffee
Dinner		Dinner
Meat soup (no veg.) ..	1 serving	Chicken soup
Meat or fish .....	1 serving	Lamb chops
Potato .....	1 serving	Potato in half shell
Gravy .....	if desired	
Vegetable puree ....	1 serving	Vegetable puree
Bread, white or rye..	1 slice	Bread, rye
Butter .....	2 squares	Butter
Dessert, bland (no fruit) .....	1 serving	Chocolate blanc mange
Cream .....	2 tablespoons	
Tea if desired		Tea
Supper		Supper
Meat or fish.....	1 serving	Roast chicken
or		
Eggs .....	2	
Steamed rice .....	1 serving	Steamed rice
Bread, white or rye..	1 slice	Bread
Butter .....	2 squares	Butter
Dessert, bland (no fruit) .....	1 serving	Jelly
Cream .....	2 tablespoons	Cottage pudding
Tea if desired		Tea

### d. MODIFIED LOW RESIDUE DIET.

To the low residue diet are added the following foods:

Milk  
Bland fruits  
Whole low residue vegetables

## 108. Colostomy Diet

a. The dietary measures for the patient who has undergone colostomy must be individualized. For a foundation or starting point use the following special low residue diet. It is served as soon as the colostomy is open and is continued until the stools become normal in character and frequency. In colostomy diets it is sometimes necessary to limit the fluid intake to 4 or 5 glasses (1000 to 1200 cc), including tea, coffee and other beverages. It is ad-

visible to have most of the liquid allowance taken at mealtime and to allow very little liquid and no food between meals.

b. As soon as the stools become normal in frequency and consistency the diet and fluid intakes are

### COLOSTOMY DIET

Diet outline	Sample menu
Breakfast	Breakfast
Cereal, bland ..... 1 serving	Cream of wheat
Cream ..... $\frac{1}{2}$ cup	Cream
Bacon ..... 2-3 strips	Bacon
Egg ..... 1	Poached egg
Toast ..... 1 slice	Toast
Butter ..... 1 square	Butter
Coffee if desired.	Coffee
Dinner	Dinner
Meat or fish..... 1 serving	Lamb chops
Potato ..... 1 serving	Potato in half shell
Gravy ..... if desired	Bread, rye
Bread, white or rye.. 1 slice	Butter
Butter ..... 2 squares	
Dessert, bland (no fruit) ..... 1 serving	Chocolate blanc mange
Cream ..... 2 tablespoons	
Tea if desired.	Tea

### COLOSTOMY DIET—Continued

Diet outline	Sample menu
Supper	Supper
Meat or fish ..... 1 serving or	Roast chicken
Eggs ..... 2	
Steamed rice ..... 1 serving	Steamed rice
Bread, white or rye.. 1 slice	Bread
Butter ..... 2 squares	Butter
Dessert, bland (no fruit) ..... 1 serving	Jelly
Cream ..... 2 tablespoons	Cottage pudding
Tea if desired.	Tea

gradually increased in accordance with the patient's tolerance. Milk, vegetables and fruits are usually the first foods to be added. In the beginning the low residue vegetables should be chosen and should be cooked. Later a greater variety of vegetables, both raw and cooked, may be tolerated. In all cases, however, it is well to exclude the following: cabbage, cauliflower, sprouts, radishes, cucumbers, turnips, rutabagas, peppers, onions, sweet corn, shelled beans, sauerkraut, melons, rhubarb.

c. Before the patient leaves the hospital, he is carefully taught how to regulate and adjust his diet. Some patients find it necessary to adhere quite closely to the low residue diet, others are able to partake more liberally of fruits and vegetables while a few are able to take a full normal diet.



## MISCELLANEOUS SPECIAL DIETS AND DIETARY TESTS

### Section I. TUBERCULOSIS DIET

#### 109. General

*a.* Every attempt should be made to restore tuberculous patients to a normal state of nutrition. They should not be allowed to become obese, however. The diet should be adequate in protein, fat, carbohydrate, and minerals and should have a *high vitamin content*. Experience has shown that tuberculous patients tend to be depleted in vitamin C (ascorbic acid) and vitamin A. These vitamins, as well as vitamin B<sub>1</sub> (thiamin), should be provided in abundance. It has been conclusively demonstrated that vitamin C protects against epithelial injury of the alimentary tract. There is evidence that resistance is lowered by deficiency of protein in the diet, and measures should be taken to insure adequacy of this food element.

*b.* Food should be tempting in appearance and taste. It must be served frequently—three good meals with nourishments between and at bed time.

#### SAMPLE TUBERCULOSIS DIET

Breakfast	Dinner	Supper
Orange juice.	Noodle soup.	Hot roast pork
Wheat cereal.	T-bone steak.	sandwich, gravy.
Scrambled eggs.	Baked potato with	Cranberry sauce.
Broiled bacon.	butter.	Asparagus tips.
Whole wheat toast.	Peas and carrots.	Tossed green
Butter.	Sliced tomato	salad, French
Choice of beverage.	salad.	dressing.
	Whole wheat	Whole wheat
	bread.	bread.
	Butter.	Butter.
	Fresh fruit cup.	Lemon sherbet.
	Milk.	Oatmeal cookies.
		Milk.
	Fresh fruit.	Milk.
<i>Nourishment:</i>		
Grapefruit		
juice.		

The diet should have wide latitude in variety and be modified to meet extenuating circumstances—notably anorexia disturbances in digestion, colitis, and diarrhea. During acute phases of the disease appetite vanishes. The patient then needs a general fever diet (ch. 8). Afterward when appetite returns, care should be taken that the patient does not overeat. When hemorrhage has occurred it is advisable to add items such as liver, eggnog and beef juice to the diet.

### Section II. DIETARY MANAGEMENT IN CASES OF MAXILLO-FACIAL WOUNDS

#### 110. Methods of Feeding

The method by which patients suffering from maxillo-facial wounds may be fed will depend upon the nature and location of the injury. As long as liquid nourishment is necessary one of the following methods can be used:

- Drinking tube.
- Spoon feeding.
- Food delivered through catheter into posterior region of the mouth.
- Naso-gastric tube.

In all cases the objective is to provide ample nutrient elements, high calories and palatability.

#### DIET SUITABLE FOR PATIENT WITH WIRED JAW

Diet No. 1 Liquid (approx. 2500 calories)

##### Breakfast:

Orange juice  
Strained cereal gruel thinned with cream  
Cocoa

10:00 AM

Milk

*Dinner:*

Strained cream soup (celery)  
 Vegetable cocktail  
 or  
 Thinned puree (pea) (Green or yellow veg.)  
 Eggnog

2:00 PM

Orange juice

*Supper:*

Strained vegetable soup  
 Beef juice,  
 or  
 Beef tea,  
 or  
 Raw liver cocktail  
 Fruit milk shake

8:00 PM

Milk

## Supplements needed:

Vitamin C  
 Vitamin D

Diet No. 2 Semisoft (approx. 2600 calories)

*Breakfast:*

Orange juice  
 Strained cereal gruel,  
 cream  
 Soft egg  
 Cocoa

10:00 AM

Orange juice

*Dinner and Supper:*

Strained cream soup (celery)  
 Puree vegetable (pea)  
 Soft custard, plain ice cream, plain flavored  
 gelatin with cream or pureed fruit.  
 Eggnog

2:00 PM

Milk

## Supplements needed:

Vitamin B complex  
 Vitamin C  
 Vitamin D

## Section III. CHILDREN'S DIETS

## III. General Requirements

Diets for children require special consideration. They are frequently needed in army station and general hospitals. As they contain more calories and a higher protein content per kilogram of body weight than do adult diets, each child's diet may be considered a special one. For children between 2 and 15 years of age, certain requisites deserve special consideration. Unless there are definite contraindications, the following general guide will be followed in the preparation of menus.

a. Protein, at least three grams per kilo of standard body weight.

b. Total calories, 80-90 per kilo of standard body weight.

c. A normal carbohydrate-fat ratio of approximately 3 : 1.

d. A daily minimum of the following foods or their equivalents should be provided:

1 quart milk  
 1 egg  
 4 ounces orange juice  
 Whole wheat bread  
 Liver once a week.

## II. Ordering Diet

When ordering a *child's diet*, it should be so stipulated. Also a record of the *standard weight* for the child and a request for any modification of the diet should accompany the order, for example: Child's diet, low fat, high carbohydrate: Standard weight, 60 pounds.

## III. Food Selection

a. Most foods used by adults may be eaten by children if properly prepared. Menus will be made up from the following:

Bread, cereals, crackers—All.  
 Beverages—Milk, cocoa, eggnog, malted milk, and ovaltine.  
 Cereals—All.  
 Eggs—Any form except fried.  
 Dessert—Ice cream, plain cakes, puddings, cookies, and gelatin.  
 Fruit—All full ripe fresh, canned or cooked.  
 Meats and meat substitutes—All.



Vegetables—All, if well cooked and not too highly seasoned.

*b. Avoid especially pastry, condiments, excessive sweets, fried foods, tea, and coffee.*

#### SAMPLE MENU FOR CHILDREN

Breakfast	Dinner	Supper
Orange juice.	Cream soup.	Sliced chicken
Cream of wheat.	Lamb chop.	with gravy.
Egg.	Baked potato.	Mashed potato.
Whole wheat toast.	Buttered string	Grapefruit, lettuce,
Butter.	beans.	salad.
Milk or cocoa.	Bread.	Bread.
	Butter.	Butter.
	Applesauce.	Peach ice cream.
	Milk.	Milk.
10:00 AM: Choco-	3:00 PM: Fruit	
late milk.	juice.	
Graham cracker.	Cookies.	

### Section IV. TEST DIETS FOR FOOD ALLERGY

#### 114. General

The detection of the food or foods to which an individual is allergic is not always a simple matter. Painstaking questioning of the patient and the use

of test diets have yielded the best results. However skepticism is always advisable. Four elimination diets are presented in detail. *Diet 1* is tried first. The menu for *Diet 1* illustrates the possibility of insuring a fair intake of protein, vitamins, mineral salts, and calories during such a test. The general principle in planning these diets is to include one or two starches and meats, from two to four vegetables and fruits, together with sugar, oil, and salt. Comparatively large amounts of oil, olive, cottonseed, or maize oil, should be taken on salads, and sugar is used freely on fruits and in fruit drinks in order to increase the calories. If sensitization to one or more foods in *Diet 1* shows up, similar foods to which the patient is not sensitive may be substituted from groups 2 and 3. Or if no sensitizations show up with *Diet 1*, items from groups 2, 3, and 4 should be added *one at a time*. *Diet 3* is used if sensitization to cereals is suspected. *Diet 4* is planned for the detection of and treatment for allergic sensitiveness to all meats. A milk diet may be used if the patient is not sensitive to it. When symptoms are found to be relieved with the exclusive use of milk, other foods may then be added gradually, using careful scrutiny for the first evidence of abnormal reactions.

#### 115. Menus for Test Diets

*a.* Food selections for elimination diets above can be made from the following lists. They are some-

#### ELIMINATION DIETS FOR TESTING FOR FOOD ALLERGY

	Diet 1	Diet 2	Diet 3	Diet 4	Diet 5
Cereal .....	Rice (natural)	Corn	Rice	Rice	Milk alone for the test period 2-3 quarts a day.
Bread .....	None	Corn pone*	Tapioca	Rye	
Meat or fish .....	Lamb	Bacon	None	Rye rice**	
Vegetables .....	Lettuce	Chicken	Beef	Rye crisp	
	Spinach	Squash		Cod, halibut and white fish	
	Carrots	Asparagus	Tomatoes	Lettuce	
Fruits and jams and fruit drinks .....		Peas	Celery	Carrots	
	Lemon	Artichokes	String beans	Peas	
	Pears	Pineapple	Grapefruit	Beets	
	Peaches	Apricot	Pears	Pineapple	
Miscellaneous .....	Sugar	Prunes	Peaches	Apricots	
	Olive oil	Sugar	Sugar	Pears	
	Salt	Mazola oil	Wesson oil	Sugar	
	Olives (unstuffed)	Salt	Salt	Olive oil	
	Maple syrup		Gelatin	Salt	
	Gelatin		Maple syrup	Olives (unstuffed)	

\* Corn pone is made with cornmeal, salt, water, and crisco.

\*\* Rye rice bread:  $\frac{1}{2}$  cup rye flour,  $\frac{1}{2}$  cup rice flour, 6 level tsp. B. P. (Royal), 4 level tsp. sugar,  $\frac{1}{4}$  tsp. salt,  $\frac{1}{2}$  cup water,  $\frac{1}{2}$  tsp.

shortening. This recipe is for eight small muffins; if the amounts are doubled, a loaf can be made. The bread may be more palatable if toasted. Royal baking powder does not contain egg.

times referred to as Rowe Diets after the innovator. In general one item would be chosen from each food group but more could be provided if the patient wishes. Numbers in parentheses refer to recipes that follow.

## TEST BREAKFAST MENU

### *Diets 1 and 2 (Rowe)*

#### *Beverage:* *Approximate amounts*

- |  |            |
|--|------------|
| (1) Grapefruit (fresh) juice<br>or lemonade with sugar as<br>desired | 1 glassful |
| (2) Pineapple juice  |            |

#### *Cereal:*

- |   |   |
|---|---|
| (1) Boiled brown or polished<br>rice or cooked corn meal<br>served with apricot, peach<br>or prune juice and sugar                        | $\frac{1}{2}$ cup rice<br>3 teaspoons juice |
| (2) Rice krispies or corn flakes<br>served with grapefruit<br>juice and sugar or with<br>apricot, peach or prune<br>juice or maple syrup. | $\frac{3}{4}$ cup dry flakes                |
| (3) Cold rice or cornmeal<br>fried in Mazola oil or<br>bacon or chicken fat<br>served with maple syrup<br>or Karo corn syrup              |   |

#### *Meat:*

- |   |             |
|---|-------------|
| (1) Bacon (mod. crisp) or                         | 3 slices    |
| (2) Lamb chops, lamb or<br>chicken croquettes (1) | 1 med. chop |
| (3) Lamb kidney fried with<br>bacon               |             |

#### *Bread:*

- |                           |                  |
|---------------------------|------------------|
| (1) Corn pone (2)         | 2 muffins        |
| (2) Corn rice muffins (3) | 2 slices toasted |
| (3) Corn rye muffins (4)  |                  |
| (4) Rice bread (5)        |                  |
| (5) Rye bread (6)         |                  |
| (6) Rye crisp             |                  |

#### *Jams or Preserves:*

- |  |               |
|--|---------------|
| (1) Peach or prune jam                                 |               |
| (2) Apricot or apricot-pine-<br>apple jam or preserves | 2 tablespoons |
| (3) Grapefruit and lemon<br>marmalade                  |               |
| (4) Pear butter (7)                                    |               |

#### *Fruit:*

Sliced or whole grapefruit;  
canned, fresh or stewed  
peaches; apricots; pears;  
pineapple or prunes

*Note.* Chicken fat and meat should come only from broilers or roosters. Meat from hens frequently has egg protein on it as a result of breaking unlaidd eggs in dressing them. Breads, muffins and cookies should be made at home or by bakers who follow these recipes or similar ones. Rye flour especially is apt to be mixed with wheat, and commercial rye bread practically always contains wheat and milk. Cornmeal can be obtained in different degrees of fineness.

*Approximate  
amounts*

## LUNCH AND DINNER

### *Diets 1 and 2 (Rowe)*

#### *Salad:* *Approximate amounts*

- |  |   |
|--|---|
| (1) Lettuce with apricot,<br>peach, pear or pineapple<br>with oil dressing or special<br>mayonnaise  | 2 halves or slices  |
| (2) Vegetable salad made of<br>tomato, carrots, beets,<br>asparagus, peas, string<br>beans or artichokes with<br>oil dressing or special<br>mayonnaise | $\frac{1}{2}$ cup mixed<br>vegetables;<br>1 tablespoon-<br>ful oil or<br>dressing |
| (3) Sliced tomato or lettuce-<br>tomato with oil dressing  |   |
| (4) Lemon gelatin with grated<br>carrots and crushed pine-<br>apple  |   |

#### *Soup:*

- |  |       |
|--|-------|
| (1) Lamb broth, clear or with<br>rice, carrot, peas, string<br>beans as desired    | 1 cup |
| (2) Chicken broth, clear or<br>with rice, carrot, peas,<br>string beans as desired |       |
| (3) Split pea soup   |       |

#### *Meat:*

- |  |              |
|--|--------------|
| (1) Lamb served as chops,<br>roast, tongue or stew<br>made with lamb, rice,<br>corn, carrots, peas, beets<br>or string beans | 2 med. chops |
|--|--------------|



*Approximate  
amounts*

- (2) Chicken-roasted, fried, broiled, stewed. May be rubbed with bacon if desired or stuffed with rice or corn meal 1 broiler or equivalent
- (3) Thicken gravy or sauces with rice flour or cornstarch

*Vegetables:*

Spinach, carrot, squash, asparagus, peas, artichokes, beets, tomatoes, string beans 4 tablespoonfuls

*Bread:*

Choice of those in breakfast

*Jams or Preserves:*

Choice of those in breakfast

*Dessert:*

- (1) Fruit as suggested for breakfast
- (2) Rice fruit pudding (8)
- (3) Tapioca fruit pudding (9)
- (4) Corn-rice cookie or rice cup cake (10)

*Beverage:*

- (1) Grapefruit juice or lemonade with sugar. Corn dextrose may be used if extra carbohydrate is desired 1 glassful

*Note.* It is best to use canned, preserved, or fresh cooked fruits. Uncooked fruits, other than grapefruit or lemon, are more likely to produce allergic reactions than are heated fruits. Dried fruits, well cooked, with the exception of prunes, are not well tolerated by some patients. Soups may be made only with ingredients allowed in the prescribed diets. Canned soups and those in restaurants and hotels are apt to contain wheat, egg, or other forbidden ingredients. Meats must not be cooked or basted with any food, such as wheat flour, butter, or spices. Gravies must be thickened only with prescribed flours. Gelatin may be incorporated in salads and desserts if desired.

## RECIPES FOR TEST DIET ITEMS

### *Chicken croquettes*

1 tablespoon oil or chicken fat 2 tablespoons cornstarch $\frac{1}{2}$ cup liquid (chicken broth) $\frac{3}{4}$ cup cooked minced chicken Salt	Make a sauce of fat, cornstarch and liquid. Add the other ingredients (Cooked cornmeal may be added). Cool, shape, dip in rye flour or crushed corn flakes. Bake in medium oven or fry in deep fat.
--	---

### *Corn pones*

1 cup cornmeal $\frac{1}{2}$ teaspoon salt Boiling water 1 tablespoon Mazola oil	Carefully pour enough boiling water onto the cornmeal to make a stiff mixture, stirring constantly. Add oil and mix well. Mold into oblong "pones" and fry in hot skillet in enough fat to prevent sticking. When brown on one side, turn and brown other side. Serve hot.
---	--

### *Corn and rice muffins*

$\frac{1}{2}$ cup yellow cornmeal $\frac{1}{3}$ cup rice flour 2 tablespoons sugar $2\frac{1}{2}$ teaspoons baking powder 3 tablespoons Mazola oil $\frac{1}{2}$ cup water	Mix all dry ingredients well, sifting together four or five times. Add water and oil. Bake in hot oven 20 minutes. Makes six small muffins.
---	---

### *Corn and rye muffins*

Use above recipe but substitute rye flour for rice flour.

### *Rice bread*

1 cup rice flour 3 teaspoons baking powder 2 tablespoons bacon fat or oil 1 tablespoon sugar $\frac{1}{2}$ teaspoon salt $\frac{3}{4}$ cup water	Sift the dry ingredients. Add water and fat. Bake in loaf pan in a moderate oven.
---	---

*Note.* Fat used in recipes for greasing pans or shortening must only be oil or fat specified in the prescribed diet. Baking powder should be Royal or Schillings which contains no egg.

*Rye-rice bread*

$\frac{1}{3}$ cup rye flour	Sift all dry ingredients
$\frac{2}{3}$ cup rice flour	together. Add water
$\frac{1}{2}$ teaspoon salt	and oil. Bake in a loaf
6 teaspoons sugar	pan in a moderate
5 teaspoons baking	oven for 40 minutes.
powder	
2 teaspoons olive oil	
$1\frac{1}{3}$ cups water	

*Pear butter*

Select firm, ripe pears. Peel, core and cut into rather small pieces. To two cups prepared fruit add one cup of sugar. Cook slowly, stirring frequently to prevent burning, for two hours or until the mixture is quite thick.

*Rice-fruit pudding*

Sauce	Mix sugar, salt and
1 cup sugar	cornstarch. Add water
2 tablespoons rice flour	and cook until thick.
$\frac{1}{2}$ teaspoon salt	Remove from stove
$1\frac{1}{4}$ cups boiling water	and add flavoring. Add
1 teaspoon lemon juice	boiled rice and apri-
or vanilla	cots or sliced peaches
	and serve warm. Re-
	serve some sauce to
	pour over the pudding.

*Tapioca-fruit pudding*

2 halves peaches sliced	Drain peaches and
1 tablespoon dry tapioca	sprinkle with one tea-
2 teaspoons sugar	spoon sugar. Cook
$\frac{1}{2}$ cup peach juice and	tapioca in juice and
water	water until it is clear.
	Add remaining sugar
	and salt. Line a bak-
	ing dish with peaches.
	Fill with tapioca and
	bake in a moderate
	oven twenty minutes.

*Rice cup cakes*

$\frac{2}{3}$ cup hot water	Pour hot water over half
$1\frac{1}{2}$ cups rice flour	the flour. Cream sugar
2 level tablespoons short-	and shortening and
ening	add to above mixture,
$\frac{1}{4}$ cup sugar	beating well. Add the
$\frac{1}{4}$ teaspoon salt	other ingredients, mix-
3 tablespoons baking	ing well. Bake in muf-
powder	fin pans about 20
1 teaspoon vanilla	minutes in a fairly hot
	oven.

*Tomatoes cooked with sugar*

Select firm, ripe tomatoes. Remove skins, cut in slices and drain an hour or more. For each cup of tomatoes add a cup of sugar and boil until thick, stirring often. Sliced lemon may be added to the tomatoes while cooking.

*Chicken and pineapple salad*

Cut cold chicken, boiled, into cubes and marinate for 2 hours in French dressing of oil and white vinegar and salt. Drain well, mix or stir with about one-third its volume of diced pineapple and add special mayonnaise, thinned with pineapple juice to taste.

*Split pea soup*

1 cup green split peas	Cook peas until they
3 cups water	form a smooth puree.
1 tablespoon bacon fat	Just before serving
Diced bacon (crisp)	add salt, bacon fat and
Salt	crisply fried bacon.

**116. Diets for Special Allergies**

The following diets may be used when the patient's allergy has been definitely determined. Diets free from wheat, milk and eggs respectively are presented below.

**WHEAT-FREE DIET***Foods Allowed*

Beverages. Cocoa, fresh or bottled fruit juices, mineral or carbonated waters

Breads. Arrowroot cookies, biscuits or breads (made without wheat), corn bread, corn pone, oatmeal muffins, potato muffins, rice, rye krisp.

Cemac.

Cereals. Barley, barley flour, cornmeal, cornstarch, potato flour, rice flakes, rolled oats, salt, tapioca.

*\*Foods to Avoid*

Fats. Butter, meat, poultry or vegetable fats, olive or other salad oils, oleomargarine.

Fruits. All kinds, raw, canned or plain cooked with sugars, honey or syrups.

Meats. All meats may be eaten if they are not prepared with wheat products. Ready-prepared meats such as hamburger, meat loaf and sausages should not be used as they frequently contain wheat products as fillers.

Milk and its products. Butter, buttermilk, cheese, cream, ice cream, sherbets.



*Foods Allowed*

Condiments. Cinnamon, cloves, ginger, mint, nutmeg, paprika, pimiento, poppy seed, salt, vanilla.

Eggs. Baked, coddled, deviled, escalloped, hard or soft cooked, poached, omelets, scrambled and shirred.

Nuts. All kinds.

Olives. Green, ripe or stuffed.

Pastries and other desserts—

Bavarian cream, charlotte russe, cornstarch pudding, fruit gelatins, homemade ices or ice creams, oatmeal, rice or rye cookies, tapioca pudding, Indian pudding, rye krisp pastry.

Poultry and Game. Do not use wheat products in preparation.

Sea foods. Use no wheat products in preparation.

Soups. Homemade cream, meat and vegetable soups. Wheat products must not be used as thickening agents.

*\*Foods to Avoid*

Miscellaneous. Pop corn, potato chips, raisins, salad dressings (but may be allowed if made at home without the addition of wheat products).

Beverages. Cereal beverage made from wheat. Information as to ingredients may be found on can or package.

Breads. Hot breads such as muffins, popovers, baking powder biscuits, made with wheat products. Wheat breads. This will include the following: Corn bread (unless made at home without use of wheat flour), crackers of all kinds (this does not include Ry-Krisp), gluten bread, graham bread, pretzels, rye bread (unless homemade with only rye flour), white bread, whole wheat bread, Zwieback.

Cereals. All dry or cooked cereals made from or containing whole wheat, farina or bran.

Flour. Wheat flour in any form — whole wheat, graham, or white or any mixture of grain flours that may have wheat content.

Hot Cakes. Griddle cakes, waffles.

Pastries and other Desserts. Doughnuts, pastries of all kinds, such as cakes, pies and cookies (unless made with flours free from wheat products).

*Foods Allowed*

Sugars. Brown, granulated, powdered and maple. Homemade jellies, jams, preserves and candies.

Vegetables. All kinds, canned, cooked or raw. Only butter, milk and cream should be added in preparation.

*\*Foods to Avoid*

Wheat Products. Bread crumbs, buckwheat, cracker crumbs, cracker meal, graham flour, macaroni, noodles, spaghetti, vermicelli, white flour, whole wheat flour.

Miscellaneous. Gravies and cream sauces which are made with wheat products, malt products, yeast cakes.

\* Special care must be taken to avoid wheat products to thicken sauces, gravies, or in preparation of any other foods.

## MILK-FREE DIET

*Foods Allowed*

Hypo-allergic milk. Sobee (Soy bean product).

Cemac.

Meats.

Sea Food.

Game.

Poultry.

Eggs.

Fruits.

Vegetables.

Cereals and Cereal Products.

Sugars.

Jellies.

Jams.

Honey, and preserves prepared without the use of dairy products.

Beverages—Postum, soft drinks.

Bread—Rye krisp, corn pone or others in which there are no dairy products.

Candies — Home-made with water, such as fondant, molasses taffy, French paste, and divinity.

*\*Foods to Avoid*

Breads—Breads (unless prepared without dairy products).

Beverages—Chocolate or cocoa—as a beverage (unless made with water), malted milk.

Candies — Except those that do not contain dairy products.

Dishes prepared with milk — Escalloped dishes, foods prepared au gratin, rarebits, souffles.

Milk and other dairy products—Butter, buttermilk, cheese; condense, evaporated or dried milk; cream, curd, ice cream and sherbets; milk, whole or skimmed; powdered or malted milk, whey.

*Foods Allowed*

Fats—Poultry, vegetable or meat fats, olive or other salad oils. Oleomargarines that contain no butterfats. (Some commercial brands are churned in milk.)

Ices—Fruit ices made with water (no prepared brands).

Meat Soups—Without products such as noodles, that may contain dairy products.

Pastries—Cake or cookies, pie crust, puddings and shortcake made without dairy products.

Salad Dressings—Made without dairy products, such as French dressing.

Unsaturated Fats—Some cases of eczema are benefited by the consumption of unsaturated fats such as Linseed oil and Mazola oil.

*\*Foods to Avoid*

Pastries and desserts—Cakes and cookies (containing dairy products), custards, ice cream, milk or cream sherbets, puddings (made with dairy products), hard sauces, milk or cream sauces.

Soups—Bisques, chowders, milk or cream soups.

Miscellaneous — Gravies made with milk, cream or other dairy products. Oleomargarine, if churned in milk.

Omelets or scrambled eggs (made with any of the dairy products).

## EGG-FREE DIET

*Foods Allowed*

Cemac.  
Meats.  
Sea food.  
Poultry.  
Game.  
Milk and its products.  
Soups.  
Fruits.  
Vegetables.  
Fats.  
Nuts.  
Sugar.  
Cereals and Cereal products.  
Breads—Rye krisp, corn pone and others in which egg has not been used in the preparation. Most breads purchased contain egg or are brushed with egg white to glaze the top.  
Ices, ice creams, sherbets and candies—Made at home without the use of eggs, or foods containing eggs as listed herein.  
Pastries — Only those containing no eggs.  
Salad dressings — Made at home without the use of eggs.

*\*Foods to Avoid*

Egg Dishes — Baked, coddled, creamed, deviled, escalloped, fried, hard or soft cooked; omelets, poached, scrambled, shirred.  
Egg Recipes—Baking powders (most brands), boiled dressings, breaded foods (in which the adherent used has been an egg mixture), cakes (unless homemade without eggs), cookies (unless homemade without eggs), custards, doughnuts, dried eggs, dumplings, egg drinks, egg sauce, egg whips, fritters, frostings (unless homemade without eggs), griddle cakes, ice cream (unless homemade without eggs), macaroni, macaroons, malted cocoa drinks malted milk, marshmallows, mayonnaise, meringues, noodles, pretzels, spaghetti, Spanish cream, timbales, waffles.

*\* Note.* The forbidden foods must not be used for cooking purposes. In purchasing ready-prepared food products one must be certain that they do not contain dairy products.

*\* Note.* This list points out the foods most likely to be used by mistake. Eggs must not be used to clear soups. The utmost caution is important in choosing prepared foods to be sure they have no egg content.



## OVERSEA HOSPITAL RATION

**117. Definition**

Oversea hospital ration consists basically of the components of the Expeditionary Force Ration which are nonperishable (processed, canned, and dehydrated) items of foods. Whenever practicable, the nonperishable items may be replaced by either fresh or frozen foods, or both. Additional items deemed essential to the recovery of the sick and wounded are included in the ration.

**118. Use**

Oversea hospital ration is designed for use in any overseas theater whenever it appears to be practicable. The unnumbered War Department Circular, titled "Expeditionary Force Menu No. 1 for Tropical and Temperate Areas," 22 September 1943, is the basis for the unnumbered War Department Circular, titled "Issue Chart based on Expeditionary Force Menu No. 1 for Tropical and Temperate Areas," 22 September 1943. Both of these circulars on menus and issues are now reprinted as SB 10-44 and SB 10-45 respectively, 1 April 1944. These bulletins are available upon request of units which do not have the circular. Oversea hospital ration is based upon the foods provided according to the Issue Chart based on Expeditionary Force Menu No. 1. Hospitalized troops on regular diets will receive basically the same menu (Expeditionary Force Menu No. 1) as field troops increased by additional food items and quantities of certain foods. Those on special diets will

receive a menu designed for their needs from special foods prescribed in the Issue Chart. The menu should be planned by Medical Department Dietitians. There have been, and will be, many instances wherein the foods prescribed in the Issue Chart based on Expeditionary Force Menu No. 1 will be the only foods available for hospital use. Therefore, all mess personnel of a hospital should be familiar with the amounts of each food which should be issued, the type of patient for which each food is intended, and preparation of the food. Each of these points will be discussed separately.

**119. Food Issue**

The Issue Chart is to be used *as a guide*, based on Expeditionary Force Menu No. 1. The menu covers a meal plan for ten (10) days. In interpreting the terms used in connection with the Expeditionary Force Ration and the overseas hospital ration, it is essential to keep three factors in mind.

*a.* Foods are planned on the basis of a 10-day cycle.

*b.* The phrase "ten thousand rations" indicates the total quantity of each food provided for one thousand (1000) men for the entire ten (10) days.

*c.* The ratio of nonhospitalized troops to hospitalized troops is arbitrarily set at 85 to 15.

The Issue Chart, Based on Expeditionary Force Menu No. 1, revised 1 October 1943, has the following columns:

Items	Unit	(1) In units for 100 men 10 days	Requirements in Pounds		
			(2) For 10,000 rations based on Menu No. 1	(3) Additional quantities to complete hospital rations	(4) Total issues for 10,000 men and hospital rations
Example: Chicken Boned	35-oz. Can	11 Cans	241 lbs.	54 lbs.	295 lbs.

Column 1 titled "In units for 100 men 10 days" lists the quantities of food (in units) required for 1000 Expeditionary Force Rations (that is "for 100 men 10 days"), while column 2, titled "For 10,000 rations based on Menu No. 1," converts the units to the

number of pounds of each item required for (1000) *one thousand* men for the entire 10 days for which the Expeditionary Force Menu No. 1 is used.

It is to be emphasized here that the items and quantities listed in column 2 are designed to provide

the foods necessary not only for nonhospitalized troops, but also a major portion of the food required for hospitalized troops. Column 2 indicates the quantities of food items sufficient for 850 nonpatient troops for 10 days (8500 rations) and for 150 hospitalized troops for 10 days (1500 rations) or in the ratio of 85 to 15. Column 3 lists the items which are to be used along with certain amounts from column 2 in order to complete the hospital ration. Column 4 of the Issue Chart is titled "Total issues for 10,000 menu and hospital rations" and lists foods for 1000 troops (hospitalized and nonhospitalized, combined) for 10 days.

At the time the Issue Chart was published it was expected that hospitalized troops would require the various diets as follows:

- 85 percent of patients would require Regular diets
- 6 percent of patients would require Soft diets
- 4 percent of patients would require Liquid diets
- 2 percent of patients would require Special diets
- 3 percent of patients would require Light diets

This distribution was established on the basis of limited experience. Additional experience has indicated that there will be considerable variation in the percentages of patients on special diets.

To compute the amount of food which should be issued to hospitals, the following formula may be applied to the amount listed for each item in columns 2 and 3 of the Issue Chart Based on Expeditionary Force Menu No. 1:

(15 percent of amt. in col. 2 (Based on 15 percent of total troops strength)) plus (Amt. in col. 3) = Total amount for 1500 hospital rations.

To convert this to amounts needed for 1000 hospital rations (100 rations for 10 days), divide amount obtained above by 1.5 or multiply by the factor .667. Application of this formula has been made and results are reported in the following oversea hospital ration allowance to facilitate understanding of the amounts of each food which a hospital should receive for 100 patients for 10 days.

Table 5

Oversea hospital ration allowance\*—planned for 1000 hospital rations (100 rations for 10 days)

Items by food groups	Unit	Total for all patients
		Pounds
<i>Meats, poultry and fish, canned</i>		
Bacon .....	lb.	95.0
Beef, corned .....	6-lb. can	102.0

\* Items and quantities may be changed in future Issue Charts based on Expeditionary Force Menu No. 1. Such changes would necessitate corresponding changes in this table.

Table 5—Continued

Items by food groups	Unit	Total for all patients
		Pounds
Beef, fresh, roast .....	6-lb. can	55.3
Chicken, boned .....	35-oz. can	60.1
Chili con carne without beans	No. 10 can	52.0
Hash, corned beef .....	5½ lb. can	77.0
Hash, meat and vegetable...	No. 10 can	47.3
Luncheon meat .....	6-lb. can	60.0
Sausage, pork .....	2-lb. can	106.0
Sausage, Vienna .....	24-oz. can	67.5
Stew, meat and vegetable....	30-oz. can	140.6
Salmon .....	1-lb. can	48.0
Tuna fish .....	7-oz. can	19.3
<i>Eggs:</i>		
Eggs, dried, whole.....	lb.	45.2
<i>Milk products:</i>		
Cheese, processed, canned...	lb.	34.0
Milk, evaporated .....	14½-oz. can	633.9
Milk, dry, powdered, whole..	lb.	10.0
Milk, dry, malted .....	lb.	1.3
<i>Butter:</i>		
Butter, stabilized .....	lb.	95.3
<i>Fats, other:</i>		
Lard, war style type 2.....	lb.	30.5
Oil, vegetable salad.....	1-qt. can	9.7
<i>Sugar, sirup and spreads:</i>		
Sugar (4X) .....	lb.	10.7
Sugar, granulated .....	lb.	258.5
Glucose—corn sirup .....	No. 5 can	4.0
Candy, hard .....	5-lb. container	20.0
Apple butter .....	No. 10 can	33.8
Jams, assorted .....	No. 10 can	63.8
Jellies, assorted .....	No. 10 can	7.3
Marmalade .....	No. 10 can	37.7
Dessert powder with starch:		
Butterscotch .....	5-lb. can	5.0
Chocolate .....	5-lb. can	5.0
Vanilla .....	5-lb. can	5.0
Dessert powder with gelatin	5-lb. can	3.3
<i>Cereals:</i>		
Cereals, asst. 1 oz. ind.....	lb.	12.0
Cornmeal .....	lb.	14.0
Cornstarch .....	lb. pkg	5.0
Biscuit, square type C.....	2-lb. container	20.0
Crackers, whole wheat.....	2 lb. container	20.0
Flour, wheat .....	lb.	130.0
Hominy, dehydrated .....	lb.	4.0
Macaroni .....	lb.	10.0
Noodles .....	lb.	1.3
Oats, rolled .....	3-lb. pkg	24.0
Rice .....	lb.	22.0
Spaghetti .....	lb.	10.0
Wheat, uncooked .....	lb.	18.0
Whole wheat, uncooked.....	lb.	18.0



Table 5—Continued

Items by food groups	Unit	Total for all patients
<i>Legumes:</i>		Pounds
Beans, dry, red, kidney.....	lb.	8.0
Beans, dry, lima.....	lb.	20.0
Beans, dry, white.....	lb.	36.0
Peanut butter .....	No. 10 can	26.3
Soup, dehydrated navy bean.	lb.	38.7
Soup, dehydrated pea.....	lb.	38.7
<i>Potatoes, dehydrated:</i>		
Potatoes, diced or julienne..	lb.	38.0
Potatoes, shreds .....	lb.	9.0
Potatoes, sweet .....	lb.	21.5
<i>Vegetables, leafy, green, yellow:</i>		
Asparagus .....	No. 10 can	35.3
Beans, string .....	No. 10 can	75.8
Beans, string, puree .....	No. 2 can	4.3
Cabbage, dehydrated .....	lb.	3.5
Carrots .....	No. 10 can	19.5
Carrots, dehydrated .....	lb.	4.0
Carrots, puree .....	No. 2 can	4.3
Peas, green .....	No. 10 can	105.0
Peas, puree .....	No. 2 can	4.3
Spinach .....	No. 10 can	36.8
Spinach, puree .....	No. 2 can	4.3
<i>Vegetables, other than leafy, green, yellow:</i>		
Beets .....	No. 10 can	19.5
Beets, dehydrated .....	lb.	3.5
Beets, puree .....	No. 2 can	3.1
Corn .....	No. 10 can	79.5
Onions, dehydrated, sliced..	lb.	2.1
Sauerkraut .....	No. 10 can	24.8
<i>Tomatoes:</i>		
Tomatoes .....	No. 10 can	114.8
Catsup, tomato .....	No. 10 can	27.8
Juice, tomato .....	No. 10 can	140.7
Tomato, puree .....	No. 10 can	19.7
<i>Citrus Fruits:</i>		
Juice, grapefruit .....	No. 10 can	161.3
Grapefruit .....	No. 2 can	25.0
Powder, lemon juice, syn....	12-oz. can	9.4
<i>Fruits, other than citrus:</i>		
Apples .....	No. 10 can	12.0
Cherries, sour .....	No. 10 can	20.1
Fruit cocktail .....	No. 10 can	54.0
Juice, grape .....	No. 10 can	6.7
Peaches .....	No. 10 can	101.3
Pears .....	No. 10 can	53.0
Pineapple, sliced .....	No. 10 can	81.0
Juice, pineapple .....	No. 10 can	36.8
<i>Fruits, dehydrated and evaporated:</i>		
Apple nuggets, dehydrated..	lb.	4.0

Table 5—Continued

Items by food groups	Unit	Total for all patients
		Pounds
Cranberries, dehydrated.....	lb.	1.0
Apricots, evaporated.....	lb.	7.0
Peaches, evaporated.....	lb.	13.7
Prunes, evaporated.....	lb.	20.7
Raisins .....	lb.	15.0
<i>Beverages:</i>		
Cocoa .....	lb.	9.0
Coffee, R and G.....	lb.	95.3
Tea .....	lb.	2.1
<i>Miscellaneous:</i>		
Powder, baking .....	lb. can	7.0
Bouillon cubes .....	ea.	2.4
Extract flavoring:		
Lemon tablets .....	2-oz. can	.12
Vanilla tablets .....	2-oz. can	.04
Maple sirup tablets.....	2-oz. can	.03
Pickles, sweet relish.....	1-gal. can	16.0
Salt .....	10-lb. bag	20.0
Sauce, concentrated kitchen..	12-oz. can	.25
Soda, baking .....	1 lb. container	2.0
Soups, canned:		
Chicken .....	10½-oz. can	7.3
Mushroom, cream of.....	10½-oz. can	3.3
Tomato .....	10½-oz. can	5.3
Tomato, cream of .....	10½-oz. can	5.3
Spices:		
Cinnamon, ground .....	4-oz. container	.25
Mustard, powdered .....	4-oz. container	.25
Nutmeg, ground .....	4-oz. container	.25
Pepper, black .....	1-lb. container	1.5
Vinegar, concentrated		
(250 grain) .....	qt. bottle	1.2
Multivitamin tablets .....	ea.	15.0
		tablets

In addition to the above the following quantities of ingredients are required for the bread formula to produce 425 pounds of bread for 1000 rations.

Ingredients	Unit	Quantity 1000 rations
Milk, dry, powdered, skim.....	lb.	6.1
Lard, war style, type 2.....	lb.	6.1
Sugar, granulated .....	lb.	7.6
Flour, wheat .....	lb.	303.6
Salt .....	lb.	6.1
Yeast, dehydrated, granulated..	lb.	3.1

Where special diet cases exceed 15 percent of the total number of troops hospitalized, the amounts of special items should automatically be increased upon the Surgeon's request to the Quartermaster. In most

cases, a surplus of the items listed for special diets should be available because the actual percentage of troops hospitalized has been less than the 15 percent anticipated. Shipment is based, however, on this percentage. The ration scale must be fluid and this fact indicates the need for close cooperation between the Surgeon and the Quartermaster. A mutual understanding of each other's problem is essential.

It is believed that the Regular hospital diet is adequate with respect to the vitamins required for the anticipated caloric expenditure level of the patients. Patients requiring other hospital diets, however, may not eat sufficient quantities of food to provide for an adequate vitamin intake. Multivitamin capsules or tablets (content = 2500 IU Vit A; 200 IU Vit D; 1 mgm. thiamin; 1.5 mgm. riboflavin; 10 mgm. niacin; 37.5 mgm. ascorbic acid) are therefore provided as part of the ration for patients on the light, soft, liquid, and special diets. For this purpose, multivitamin capsules are issued with the hospital ration for patients on special diets on the basis of one per person per day. These capsules are supplied as regular issue items and have no connection with issues intended for medical treatment. Their use is not mandatory and is subject to the decision of the hospital's commanding officer.

## 120. Nutritional Importance of Certain Items

a. The flour supplied is enriched and therefore contributes a considerable amount of thiamin (vitamin B<sub>1</sub>) in the ration. The allowance for bread on this ration is approximately two ounces (slices) per man per meal. If the amount of bread called for in the menu is not issued, the equivalent ( $\frac{2}{3}$  pound of flour to 1 pound of bread) in flour should be substituted and used in cooking products to insure an adequate consumption of thiamin.

b. The lemon powder and the orange powder, fortified with ascorbic acid, constitute one of the main sources of vitamin C, and contribute approximately 45 to 50 percent of the total amount in the ration. It is important that these items be incorporated in beverages and foods in such ways that they will be consumed. Other important vitamin C sources are the tomatoes and tomato juice.

c. Milk (evaporated, powdered, whole, and skimmed) is one of the chief sources of calcium and riboflavin, and should, therefore, be incorporated in the diet in such form that it will be consumed. Powdered whole milk and evaporated milk are supplied for use with cereals. Evaporated milk should be used for cooking and in cocoa and coffee. Powdered skimmed milk is supplied for use in the bread formula. All milk called for in the menu should be

used daily, if not as a beverage, then in such foods as soups, puddings, sauces, pastries and other similar foods.

d. It is important that the liquids from canned fruits and vegetables be consumed for their nutritive value. Fruitade may be made from mixed fruit juices or in combination with lemon juice, synthetic. Liquids from vegetables may be used in soups, replacing water in combination with evaporated or powdered milk for creaming vegetables; and in vegetable cocktails with tomato juice. To the latter a small quantity of synthetic lemon juice powder, salt and pepper should be added for seasoning.

e. Dried Eggs. The quantity of dried eggs supplied in the ration is one of the main sources of iron and contributes an appreciable amount of protein, vitamin A and riboflavin. It is recommended therefore that they be introduced in the diet in such varied ways that will insure adequate consumption.

f. The canned meats on the ration may, from time to time, be supplemented with boneless or carcass beef or pork, which, under proper preparation, will further increase the thiamin (vitamin B<sub>1</sub>) content of the diet. It should be issued in lieu of corned beef in the following proportions:

Seven (7) ounces boneless beef for five (5) ounces corned beef.

Ten (10) ounces carcass beef for five (5) ounces corned beef.

In the event that fresh pork is available, six (6) ounces of fresh boned pork should be issued as a substitute for four (4) ounces of canned luncheon meat.

## 121. Preparation of Non-Perishable Foods (Canned, Dehydrated and Dried)

a. Recipes for dehydrated foods will be found in the unnumbered WD circular entitled "Expeditionary Force Menu No. 1" and also in TM 10-406 and Change 1, thereto, and TM 10-411. All personnel having direct supervision of a hospital mess and the preparation of foods should study these documents. Mess personnel should be thoroughly instructed in the preparation of dehydrated and dried foods used in the oversea hospital ration. Adequately trained cooks should be able to prepare attractive, palatable dishes of food from them. Variations in the method of preparation are of prime importance if consumption and nutritional adequacy are to be attained. Necessary variations can be accomplished with surprisingly little additional labor by using standard recipes.



*b. Dried Eggs:* Dried whole egg powder is a *perishable* item of food and therefore should be kept cool. Properly prepared according to standard recipes, this product will be a wholesome, flavorful and acceptable dish; poorly prepared, it will be wasted. For best results in preparing scrambled egg dishes, no more than 25 servings should be prepared in a container at one time. Larger batches are difficult to reconstitute and cook, and the scrambled eggs will be inferior in flavor and texture. The use of seasoning, meats, cheeses, and flavorful sauces combined with scrambled eggs will bring out the flavor of the eggs and, in addition, lend variety to egg dishes. Scrambled egg dishes should be removed from the range while they are still soft, as the eggs will continue to thicken due to the retained heat. Allowing any egg to cook to completion over the fire will result in an overcooked product of inferior flavor and texture. Eggs should be used within an hour after they are reconstituted. They should not be held overnight.

It is further recommended that dried whole egg powder be served in ways other than as scrambled eggs by incorporating them in other dishes. This should be done to increase the consumption of this product and insure nutritional adequacy. This is especially important when the powdered egg product is not fresh and consumption of it is poor. Consumption will be increased by incorporating them in the following dishes: beverages, as eggnogs; desserts, as puddings, cakes, ice cream, pastries, and custards; meat dishes, as croquettes, meat loaves, meat patties and a la king dishes; scalloped vegetables dishes; baked potato dishes, as potato puff; salad dressing and in cream sauce.

When making cake the best results are attained if the dried whole eggs are sifted with the **dry ingredients** and liquid added to the milk.

Since dried whole egg powder contributes generously to the nutritive value of the ration, it is highly important that it be consumed. There is usually little difficulty in getting adequate consumption of the fresh product. Small amounts in a wide variety of dishes is the rule to follow in order to get adequate consumption of dried whole egg powder which has been on hand for some time.

*c. Dried Whole Milk:* Dried whole milk is *perishable* and should be kept cool. Because of its high calcium and riboflavin content it should be used daily in the diet. The following dishes will help to increase the consumption of dried powdered milk: milk shakes flavored with vanilla, chocolate, coffee, or a combination of chocolate and coffee, caramel (caramelizing the sugar before adding to the milk), and

fruit juices (apricot, pineapple, grape, etc.); eggnogs flavored with vanilla, chocolate, coffee, maple, etc.; desserts such as cakes, cookies, cream pies, puddings, custards (baked and boiled), ice cream, and milk sherbets; soups; hot breads, as pancakes, French toast, bread, biscuits, rolls, etc.; cream sauces; scalloped dishes of meat and vegetables; cocoa, in cereals and salad dressings. (Table VI.)

*d. Lemon Powder, Synthetic:* Since this item has high vitamin C value, it is important to know how to use it in the diet in other ways than as lemonade in order to have it consumed. Lemon powder can be added to fruitades, iced tea, puddings, pies, cakes, salad dressings, icings, sauces for desserts, and used as a flavoring extract.

*e. Dehydrated cranberries:* Cranberries are dehydrated as sliced or whole berries and as powder. Large quantities of sugar are needed for some dishes containing cranberries, but others require very little sugar. Cranberry muffins (made overseas in a cake pan as bread) requires no more sugar than the small amount recommended for muffins. Use any plain muffin recipe and add cooked, drained cranberries to the batter. Cranberry cobbler, topped with biscuit or pie crust is another delicious dish. Cranberries combined in pie with apple nuggets, raisins, or crushed pineapple are very delicious. Dishes such as puddings (using wheat cereal or farina); sauce, cocktail, salad in combination with meats are additional ways in which cranberries can be used.

*f. Dehydrated apple nuggets:* This item is a very palatable product and can be used in many dishes. TM 10-406 gives recipes for applesauce, apple pie and bread and apple pudding. Adding apple nuggets to meat dishes such as pork, sausages, bacon and ham, and vegetable soup will give additional interest to the meal.

*g. Dehydrated vegetables:* Vegetables are dehydrated in various sizes or forms; sliced, shredded, cubed, julienne and powdered, depending upon the characteristics of each vegetable and its intended use. The dehydrated vegetables included in the overseas hospital ration are: beets (cubed and julienne), cabbage, carrots (cubed and julienne), onion chips, Irish potatoes (cubed, julienne and shreds), sweet potatoes (cubed, julienne and sliced), turnips (cubed), peas (powdered), and Navy beans (powdered). The pea and Navy bean powder being used mainly for soups.

There are many factors which determine the palatability, appearance, color and efficiency of reconstitution of dehydrated vegetables. This is discussed in some detail in TM 10-406.

Table VI. Dried milk beverages and desserts

	Servings		Ingredients						Directions for mixing (Chill, if possible)
	No.	Size	Dried Milk	Water	Sugar	Flavorings			
						Vanilla	Other than vanilla		
Milk shake, vanilla	8	8 oz.	8 oz.	56 oz.	4 oz.	1½ tablets		Place water in a large pan, sprinkle milk powder and sugar on top. Beat with wire whisk until milk powder and sugar is dissolved.	
	100	8 oz.	8.3 lbs.	5½ gal.	2.2 lbs.	12 tablets			
Milk shake, coffee	8	8 oz.	8 oz.	40 oz.	4 oz.		16 oz. coffee, brewed	1. Same as above. 2. Slowly add chilled brewed coffee to the milk. Beat until a foam forms on top.	
	100	8 oz.	8.3 lbs.	4 gal.	2.2 lbs.		1½ gal. coffee, brewed		
Milk shake, chocolate	8	8 oz.	8 oz.	56 oz.	5 oz.	1½ tablets	1½ oz. cocoa + salt f.g.	1. Place cocoa, sugar, salt and part of water (1 pt. or 3 qts.) in sauce pan. Stir until mixture comes to a boil. Simmer 10 minutes or until a semi-thick chocolate syrup is obtained. Cool. 2. Add as for coffee milk shake.	
	100	8 oz.	8.3 lbs.	5½ gal.	4¼ lbs.	12 tablets	16⅔ oz. cocoa + ⅓ oz. salt		
Milk shake, w/fruit juices	8	8 oz.	8 oz.	36 oz.	5 oz.		20 oz. fruit juice	1. Same as for milk shake, vanilla, using one-half of water. 2. Mix fruit juice with remaining water then slowly add to reconstituted milk, beat until a foam forms on top. 3. Add chilled fruit juice just before serving.	
	100	8 oz.	8.3 lbs.	3½ gal.	4¼ lbs.		2 gal. fruit juice apricot, grape, peach, pineapple, etc.		
Eggnog, vanilla	8	8 oz.	8 oz.	56 oz.	4 oz.	1½ tablets	1 oz. dried egg + f.g. nutmeg	1. Place one-half of the water in a large pan; sprinkle milk and egg powder on top. Add sugar and beat vigorously with wire whisk until smooth solution is obtained. Add remaining water. 2. Dissolve vanilla tablets in a small amount of the solution; add to mixture.	
	100	8 oz.	8.3 lbs.	5½ gal.	2.2 lbs.	17 tablets	12¼ oz. dried eggs + ¼ oz. nutmeg		

Note. Eggnog Variations: Use the same ingredients as for milk shake variations, adding dried eggs in the same amount as for eggnog, vanilla.



## Dried milk and dried egg puddings

Pudding	Servings		Ingredients								Directions for mixing
	No.	Size	Dried milk	Dried eggs	Sugar	Salt	Cornstarch	Water	Flavorings		
Custard, baked	6	3 oz.	2 oz.	1 oz.	2 $\frac{2}{3}$ oz.	$\frac{1}{4}$ tsp.	1 tbsp.	17 oz.	1 tablet	Other than vanilla	1. Mix dry ingredients, milk powder, dried eggs, sugar, salt and cornstarch. Add boiling water slowly, stirring until all lumps are removed. Dissolve vanilla tablets in part of the water and add to entire mixture. 2. Pour into buttered baking pan and bake in a pan of water in a slow oven (275°F.) until firm.
	100	3 oz.	33 $\frac{1}{3}$ oz.	16 $\frac{2}{3}$ oz.	2 $\frac{3}{4}$ lbs.	$\frac{1}{8}$ oz.	2 oz.	9 qts.	8 tablets	Sprinkle with nutmeg if desired	
Custard, boiled	10	2 oz.	2 oz.	1 oz.	2 $\frac{3}{4}$ oz.	$\frac{1}{4}$ tsp.	1 tbsp.	17 oz.	1 tablet	Sprinkle with nutmeg if desired	1. Mix as for baked custard. 2. Place mixture in double boiler and cook until mixture coats a metal spoon; stirring constantly. 3. Remove from range, add dissolved vanilla tablets and cool. Serve as such or as a sauce over cake, gelatine dessert or fruit.
	100	2 oz.	20 oz.	10 oz.	26 $\frac{1}{2}$ oz.	$\frac{1}{8}$ tsp.	2 oz.	5 $\frac{1}{3}$ qts.	6 tablets	Sprinkle with nutmeg if desired	
Custard, variations honey custard	6	3 oz.	2 oz.	1 oz.	Honey, $\frac{1}{4}$ cup	$\frac{1}{4}$ tsp.	1 tbsp.	17 oz.		$\frac{1}{8}$ tsp. cinnamon	Add caramelized sugar to water.
Caramel custard	6	3 oz.	2 oz.	1 oz.	Caramel- ize sugar	$\frac{1}{4}$ tsp.	1 tbsp.	17 oz.	1 tablet		
Apricot or peach custard	6	3 oz.	2 oz.	1 oz.	2 $\frac{2}{3}$ oz.	$\frac{1}{4}$ tsp.	1 tbsp.	17 oz.	1 tablet		1. Place fruit (dried or canned) with a little juice in bottom of pan. 2. Add custard, pouring against a spoon. Bake as for baked custard.
Blanc mange, vanilla	6	3 oz.	2 oz.		2 $\frac{2}{3}$ oz.	$\frac{1}{8}$ tsp.	2 tbsp.	14 oz.	1 tablet		1. Mix dry ingredients, add water slowly until mixture is smooth. 2. Cook over hot water, stirring constantly until thick and smooth.
	100	3 oz.	33 $\frac{1}{3}$ oz.		2 $\frac{3}{4}$ lbs.	$\frac{1}{16}$ oz.	11 oz.	9 qts.	8 tablets		
Blanc mange, variation: Caramel	6	3 oz.	2 oz.		Caramel- ize 2 $\frac{2}{3}$ oz.	$\frac{1}{8}$ tsp.	2 tbsp.	14 oz.	1 tablet		1. Add caramelized sugar to water. 2. Add cocoa to dry ingredients.
Chocolate	6	3 oz.	2 oz.		2 $\frac{2}{3}$ oz.	$\frac{1}{8}$ tsp.	2 tbsp.	14 oz.	1 tablet	plus $\frac{1}{2}$ cup Cocoa	

*Dried milk and dried egg puddings (Contd.)*

Pudding	Servings		Ingredients							Directions for mixing
	No.	Size	Dried milk	Dried eggs	Sugar	Salt	Cornstarch	Water	Flavorings	
Coffee	6	3 oz.	2 oz.		2 $\frac{2}{3}$ oz.	$\frac{1}{8}$ tsp.	2 tbsp.	7 oz.	Vanilla plus 7 oz. brewed Coffee	3. Same as for Vanilla blanc mange.
Lemon pudding	8	3-4 oz.		1 oz.	12 oz.		4 tbsp. + 4 tbsp. flour	16 oz.	plus 6 tbsp. lemon juice & 2 tsp. butter	1. Mix dry ingredients, sugar, flour and cornstarch. 2. Boil 6 $\frac{1}{2}$ qts. of water. Add to dry ingredients, stirring constantly.
	100	3-4 oz.		1 $\frac{1}{4}$ oz.	8 lbs.		16 oz. + 16 oz. flour	8 $\frac{1}{10}$ qts.	plus 1 $\frac{1}{2}$ oz. lemon powder & 3 oz. butter	3. Stir mixture until it boils and cook 20 minutes or until mixture is clear over hot water. 4. Remove from range, add reconstituted dried eggs (using 1 qt. water, butter and lemon juice (reconstituted with remaining part of water).



Soaking vegetables for a short period of time (20 to 40 min.) at room temperature will help to make a tender product. Long soakage or soaking overnight should be avoided, for it results in off-flavored

products, and, in some cases, complete spoilage. For quantities of water to use and length of time to soak vegetables, consult TM 10-406 and table VII of this manual.

Table VII. Hydration chart for dehydrated foods and approximate yield in servings of 100 grams of drained cooked food

Item	I			II			Time in preparation	
	Weights of		Yield in Servings	Weights of		Yield in Servings	Time in preparation	
	Dhyd. food	Water		Dhyd. food	Water		Hydration	Cooking
Apple Nuggets.....	4 oz.	26 oz.	5.9	17 oz.	110 oz.	25	0	30 min.
Beans, baked.....	4 oz.	12.5 oz.	2.5 <sup>1</sup>	40 oz. <sup>1</sup>	125 oz.	25	0	12-15 min. or until tender
Beets, cubed.....	4 oz.	28 oz.	4.5	22½ oz.	155 oz.	25	20-40 min.	25-35 min.
Beets, Julienne.....	4 oz.	28 oz.	5.3	19 oz.	133 oz.	25	20-40 min.	25-35 min.
Cabbage.....	4 oz.	36 oz.	7	14½ oz.	129 oz.	25	10-20 min.	40-55 min.
Carrots, cubed.....	4 oz.	24 oz.	5	20 oz.	120 oz.	25	45 min.	10 min. or until tender
Cranberries (powdered)...	4 oz.	56 oz.	15 <sup>2</sup>	6½ oz. <sup>2</sup>	93 oz.	25	0	Bring to a boil and boil 1-2 minutes
Cranberries (sliced or whole).....	4 oz.	48 oz.	13.6 <sup>3</sup>	7¼ oz. <sup>3</sup>	88 oz.	25	0	Bring to a boil and simmer 15 minutes
Eggs (whole).....	4 oz.	10¾ oz.	4.3 <sup>4</sup>	23½ oz. <sup>4</sup>	250 oz.	25	0	Varies with quantity
Hominy.....	4 oz.	16 oz.					20 min.	45 min.
Milk (whole).....	4 oz.	28 oz.	4 <sup>5</sup>	25 oz. <sup>5</sup>	175 oz.	25	0	0
Milk (skim).....	4 oz.	36 oz.	4.5 <sup>5</sup>	22½ oz. <sup>5</sup>	200 oz.	25	0	0
Onions.....	4 oz.	28 oz.	5.8	17½ oz.	120 oz.	25	10-20 min.	15-25 min.
Potatoes, white (cubed or Julienne).....	4 oz.	21 oz.	5.5	18½ oz.	100 oz.	25	20-40 min.	45-40 min.
Potatoes, white (shreds)...	4 oz.	13 oz.	5.9	17 oz.	55 oz.	25	0	10-15 min.
Potatoes, sweet (cubed)...	4 oz.	16 oz.	3.3	30½ oz.	121 oz.	25	20-40 min.	35-45 min.
Potatoes, sweet (sliced)...	4 oz.	16 oz.	4.5	22½ oz.	89 oz.	25	20-40 min.	35-45 min.
Turnips (Rutabagas)...	4 oz.	24 oz.	6.3	16 oz.	96 oz.	25	20 min.	45 min.

<sup>1</sup> TM 10-406 figures = 6 oz. (180 gm.) Servings.

<sup>2</sup> 4 oz. (120 gms.) Servings of Cranberry juice.

<sup>3</sup> 2 oz. (57 gm.) Servings of Cranberry sauce.

<sup>4</sup> TM 10-406 figures = 3 oz. (85 gm.) Servings.

<sup>5</sup> 7-8 oz. (210-240 gms.) Servings.

#### NOTE.

1 Mess Kit Cup Water = 24 oz. = 1½ lbs.

1 No. 56 Dipper Water = 32 oz. = 2 lbs.

Weight of Dehydrated food in Measures, consult TM 10-406.

Dehydrated beets added to dehydrated cabbage slaw increases its eye appeal. Harvard beets are relished as hot spiced beets. Dehydrated beets are also palatable in a mixed vegetable salad.

Freshly dehydrated cabbage is very satisfactory. It retains its green color if not soaked for a long period of time. A soaking period of 2 hours will be sufficient for salad. Cabbage can also serve as a basis for other salads, thus increasing the attractiveness of the meal. Tasty dishes, such as scalloped cabbage with or without cheese, baked cabbage and tomatoes, cabbage and pork sausages, frankfurters and cabbage, can be made. A small amount in vegetable soup is good.

The flavor of dehydrated onions improve the palatability of certain dishes. Length of time re-

quired for reconstituting dehydrated onions can be shortened by pouring boiling water over the onions and allowing them to soak for 5 minutes instead of using cold water and soaking 10 to 20 minutes. Onions in soups, meat loaves, croquettes, meat patties, stews, meat pies, and fried, creamed or baked in combination with pork and bread crumbs are some of the ways dehydrated onions can be used.

Of all the dehydrated vegetables, Irish potatoes are used most extensively. Dehydrated potatoes may be difficult to distinguish from fresh, if the product is fresh and properly prepared. The potato shreds are used mainly for soup and mashed potatoes, although potato cakes and potato puffs, using dried eggs and dried milk, can be made from potato shreds. The cubed and julienne potatoes can also

be used for soup and mashed potatoes, but more variation can be attained by using them in such potato dishes as hashed browned, salad, creamed, au gratin, and fried. Julienne potatoes, when fried in a small amount of fat, resemble shoestring potatoes made from fresh potatoes. Dehydrated potatoes are not recommended for deep fat frying.

Sweet potatoes are very satisfactory when used in pie, cookies, and pudding with apple nuggets, raisins, and pineapple. Candied sweet potatoes, soup, fried sweet potatoes as well as baked, mashed sweet potatoes with pork sausage and apple nuggets are among the many dishes that can be made from dehydrated sweet potatoes.

*h. Army Spread:* Army spread is a palatable product consisting of butter, cheese curd, and skim milk. This item can be used in sauces, for buttering vegetables, and in scrambling eggs. It can be used as the fat ingredient in many recipes where the flavor of cheese is not objectionable. When direct heat is applied to Army spread, alone, it will stick to the pan and burn very easily. To melt it properly, add one part water to three parts Army spread and place over low heat. The resulting mixture resembles a thin sauce.

A white sauce made with Army spread is especially good if used in a macaroni and cheese dish, potatoes au gratin, scalloped cabbage, vegetable cas-

serole or creamed vegetables. The method of preparation, however, must be modified so that the Army spread is added after the flour and milk have been combined.

*i. Canned Roast Beef:* Canned roast beef, as issued for special diets on the oversea hospital ration, is completely cooked in the can. The meat is not as compact as corned beef and usually falls apart when removed from the can. Therefore, it must be handled carefully; vigorous stirring or boiling is to be avoided or the finished product will be stringy and unappetizing in appearance. Thorough heating is all that is necessary. Since canned roast beef will break up easily it is not necessary to use a meat grinder when ground meat is required in the recipe. It can be broken up sufficiently by hand or by vigorous stirring. The free liquor in the can contains the soluble meat extractives and should always be utilized for part of the liquor required in the recipe. Salt is the only seasoning used in canning roast beef so that additional seasoning will greatly improve the flavor of dishes in which the beef is used. Canned roast beef cannot be sliced like corned beef even though chilled. It should always be heated before serving. Canned roast beef makes excellent meat loaves, meat croquettes, beef stew, meat pie, chop suey, spanish beef, spaghetti and meat balls, and scalloped beef.



# APPENDIX

## DIETARY REFERENCE TABLES

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Table 1A. Tables of useful measures and equivalents

### Fluid

1 Teaspoon.....	= 5 cc
1 Mess Kit Spoon....	= 3 Standard teaspoons
1 Dessert Spoon.....	= 8 cc
1 Tablespoon.....	= 16 cc = 3 teaspoons
1 Ordinary Cup.....	= 200 cc
1 Measuring Cup.....	= 250 cc = 8 fluid ounces
1 Tumbler or Glass...	= 250 cc = 8 fluid ounces
1 Mess Kit Cup.....	= 1½ pints
1 No. 56 Dipper.....	= 1 qt.
1 No. 55 Dipper.....	= 1¾ qt.
1 Quart.....	= 946 cc
1 Liter.....	= 1.05 qt. = 2.0 + pints
1 Gallon (U.S.).....	= 3.79 liters
1 Gallon (British)...	= 1.2 U. S. Gallons

### Dry weight

1 Kilogram.....	= 2.2 pounds = 35.2 ounces
1 Pound.....	= 453.6 grams = 16 ounces
1 Ounce.....	= 28 grams

Table 1B. Pound-kilogram equivalents

1 Kilogram = 2.2 pounds

To convert pounds to kilograms divide the pounds by 2.2

Pounds	Kilograms
22 .....	10
25 .....	11
30 .....	13
35 .....	16
40 .....	18
45 .....	20
50 .....	22
55 .....	25
60 .....	27
65 .....	29
70 .....	32
75 .....	34
85 .....	39
95 .....	43
105 .....	48
110 .....	50
115 .....	52
120 .....	55
125 .....	57
130 .....	59
135 .....	61
140 .....	64
145 .....	66
150 .....	68
155 .....	70
160 .....	73
165 .....	75
170 .....	77
175 .....	79
180 .....	82
185 .....	84
190 .....	86
195 .....	89
200 .....	91

Table 2. Abbreviations generally used for hospital diets

General		
a	.....ante	before
a c	.....ante cibum	before meals
ad lib	.....ad libitum	as much as desired
A P	.....	as purchased
b.i.d. or 2 i.d.	.....Twice a day	} Not to be given at night
q.i.d. or 4 i.d.	.....Four times a day	
t.i.d.	.....ter in die 3 times a day	
bk	.....	baked
br	.....	brown
but	.....	buttered
c	.....cum	with
ck	.....	cooked
cn	.....or C	canned
cr	.....	creamed
cu	.....	cubed
dhyd	.....	dehydrated
E P	.....	Edible Portion
enr	.....	enriched
evap	.....	evaporated
fl	.....	fluid
gm	.....	gram
gtts	.....guttae	drops
gr	.....	grated
kg	.....	kilogram
Lg	.....	large
L	.....	Liter
med	.....	medium
m et n	.....mane et nocte	day and night
mg	.....	milligram=.001 gm
mil	.....	milliliter=1 cc
o d	.....omne die	daily—24 hr. period
o m	.....omne mane	every day
o n	.....omne nocte	every night
p.r.n.	.....Pro re nata	(As often as necessary.)
p.o.	.....per os	by mouth
p.r.	.....per rectum	by rectum
p.c.	.....post cibum	after meals
pc	.....	piece
q	.....quaqua	every
q.h.	.....quaqua hora	every hour
q. 2 h.	.....every 2 hours	} Day and night
q. 3 h.	.....every 3 hours	
q. 4 h.	.....every 4 hours	
R/	.....Recipe	take
R.	.....	raw
s	.....	without
sc	.....	scant
sl	.....	slice
sm	.....	small
sq	.....	square
str	.....	strained
stat	.....statim	at once, immediately
sos	.....si opus sit	if necessary (Referring to only 1 dose.)
t or tsp	.....	teaspoon
T or tbsp	.....	tablespoon
tr	.....	trace
wt	.....	weight
wh	.....	whole
Unofficial abbreviations often used on hospital charts		
AC	.....	Anti Constipation
H C	.....	High Caloric
HVHC	.....	High Vitamin High Caloric
Ca	.....	Cancer
G I Series	.....	Gastro Intestinal Test Series
P I	.....	Present Illness
Pt	.....	Patient
Chemical		
a	.....	acid
Ac a	.....	Acetic acid
Acet	.....	Acetone
al	.....	alcohol
Al	.....	aluminum
alk	.....	alkali
As	.....	arsenic
Ba	.....	barium
Bis	.....	bismuth
cal	.....	calorie (large)
cc	.....	cubic centimeter
Cit a	.....	citric acid
Ca	.....	calcium
C	.....	carbon



Cl .....	chlorine	Mg .....	Magnesium
Cu .....	copper	Mn .....	Manganese
CHO .....	Carbohydrate		
F .....	Fat	N .....	nitrogen
Fe .....	Iron	Na .....	sodium
		O .....	oxygen
H .....	hydrogen	P .....	phosphorus
Hg .....	mercury	Pb .....	lead
I .....	iodine	Pro or P .....	protein
Int .....	international		
I U .....	International Unit	S .....	sulphur
K .....	potassium	Zn .....	zinc

Table 3. Average standard weights for men  
(without clothing)

Age, years	5 ft.	5 ft. 2 in.	5 ft. 4 in.	5 ft. 6 in.	5 ft. 8 in.	5 ft. 10 in.	6 ft.	6 ft. 2 in.
15 .....	101	106	112	120	128	136	146	156
16 .....	103	108	114	122	130	138	148	158
17 .....	105	110	116	124	132	140	150	160
18 .....	107	112	118	126	134	142	152	162
19 .....	109	114	120	128	136	144	154	164
20 .....	111	116	122	130	138	146	155	165
21 .....	112	117	124	132	139	147	156	166
22 .....	113	118	125	133	140	148	157	167
23 .....	114	119	126	134	141	149	158	169
24 .....	115	120	127	135	142	150	159	171
25 .....	116	120	127	135	143	151	161	173
26 .....	117	121	128	136	144	152	162	174
27 .....	118	122	128	136	144	152	163	175
28 .....	119	123	129	137	145	153	163	176
29-30 .....	120	124	130	138	146	154	166	178
31-33 .....	121	125	131	139	148	156	168	180
34-35 .....	122	126	132	140	149	158	170	182
36-37 .....	123	127	133	141	150	160	172	184
38-39 .....	124	128	134	142	151	161	173	186
40-41 .....	125	129	135	143	152	162	174	187
42-43 .....	126	130	136	144	153	163	175	188
44-45 .....	127	131	137	145	154	164	176	189
46-50 .....	128	132	138	146	155	165	177	191
Over 50 .....	129	133	139	147	157	167	178	192

Table 4. *Average standard weights for women*  
(without clothing)

Age, years	4 ft. 8 in.	4 ft. 10 in.	5 ft.	5 ft. 2 in.	5 ft. 4 in.	5 ft. 6 in.	5 ft. 8 in.	5 ft. 10 in.	6 ft.
15 .....	96	100	102	107	112	121	129	137	147
16 .....	97	101	104	109	115	123	131	138	148
17 .....	98	102	106	111	117	124	132	139	149
18 .....	99	103	107	112	118	125	133	140	150
19 .....	100	104	108	113	119	126	134	141	150
20 .....	101	105	109	114	120	127	135	142	151
21-22 .....	102	106	110	115	121	128	136	143	152
23 .....	103	107	111	116	122	129	137	145	152
24-25 .....	104	108	112	116	123	130	138	146	153
26-27 .....	105	109	113	117	124	131	139	147	154
28-29 .....	106	110	114	118	125	132	140	148	155
30 .....	107	111	115	119	126	133	141	149	156
31-32 .....	108	112	116	120	127	135	143	150	157
33 .....	109	113	117	121	128	136	144	151	157
34-35 .....	110	114	118	122	129	137	145	152	158
36-37 .....	111	115	119	123	131	138	146	153	159
38 .....	112	116	120	125	132	140	148	155	161
39 .....	113	117	121	126	133	141	149	156	162
40 .....	114	118	122	127	133	141	149	156	162
41-42 .....	115	119	123	128	134	142	150	157	163
43 .....	116	120	124	129	135	143	151	158	165
44-45 .....	117	121	125	130	136	144	152	159	166
46-47 .....	118	122	126	131	137	145	153	160	168
48-49 .....	119	123	127	132	138	147	155	162	170
Over 50 .....	120	124	128	133	139	148	157	162	172

Table 5. *Average standard weights of boys and girls*  
(without clothing)

## Boys

## Girls

Age (years)	Height	Weight	Age (years)	Height	Weight
	<i>Inches</i>	<i>Pounds</i>		<i>Inches</i>	<i>Pounds</i>
Birth .....	20.5	7.5	Birth .....	20.5	7
1 .....	29.5	21.5	1 .....	29	20
2 .....	33.5	26.5	2 .....	33	25
3 .....	36.5	31	3 .....	36	29.5
4 .....	39	34.5	4 .....	39	33
5 .....	42.5	37.5	5 .....	41.5	37
6 .....	45	47	6 .....	45	42
7 .....	47	50	7 .....	47	48.5
8 .....	50	56.5	8 .....	50	56
9 .....	52	62	9 .....	52	61.5
10 .....	54	69	10 .....	54	68
11 .....	56	76.5	11 .....	56	75
12 .....	58	86	12 .....	58	81.5
13 .....	60	98	13 .....	60	90
14 .....	63	112	14 .....	62	106



Table 6A. Table for estimating caloric expenditure

For appraisal of the caloric adequacy of a ration, the following caloric output values (large calories) for various military activities have been found to be useful. Inasmuch as many of these values have been recently checked on soldiers by the Douglas bag technique, this table is considered to be generally dependable for the average soldier weighing 150 pounds. All of the values listed (except those marked with asterisk) include the formal 10 minute rest period in each hour. The unadjusted caloric values per hour, if desired, may be computed from the values below by subtracting 21, and multiplying the remainder by 6/5,

Activity	Cals. per hour
<b>Off duty</b>	
Sleeping*	67
Eating*	75
Off Duty in Area	130
<b>Clean up</b>	
Inspection	130
Policing Area	130
Toilet*	100
Fatigue details—raking up, etc.	130
<b>Athletics</b>	
Mass Games	271
Touch Football	188
Softball	188
Volley Ball	188
Wrestling, by pairs	310
Boxing, by pairs	310
<b>Basic training activities</b>	
Calisthenics: ½ hour consists of 15 minutes standing about between exercises, and 15 minutes activity including 1 minute running in place, 50 side straddle hops, 48 squat hops, 15 pushups, 50 knee-bends, 10 minutes of light arm exercise.	300
Calisthenics with rifle	396
Close order drill	255
Close order drill with rifles	275
Bayonet drill	201
Bayonet drill dummies	201
Hand grenade drill	137
Manual of arms	171
Gas mask drill	137
Rifle marksmanship	171
Obstacle course	338... (293) Respective

Activity	Cals. per hour
Obstacle course with rifles	396... (340) values where activity consists of 20 minute obstacle course and 30 minute march to or from the course.
Obstacle course with rifles and pack	438... (393)
<b>Marches (50-min. march plus 10 min. rest)</b>	
Retreat parade	171
Field march	289
Field march with rifles	338
Marching on level with light pack (27 lbs.) and rifle (9 lbs.), 50 minutes of marching and 10 minutes rest, covering 3 miles.	410
Field march with rifles and heavy pack; as above	455
<b>Extended order and maneuvers (activity as described)</b>	
Field rushes with full equipment (repetition of 5 seconds running, 10 seconds lying prone). One hour consists of (a) 10 minutes march to area; (b) 40 minutes rushing in which 5 second running followed by 10 seconds lying prone is repeated for 40 minutes; 10 minutes rest at end.	415
Creeping and crawling with full equipment. One hour consists of 20 minutes marching, 10 minutes resting, 7½ minutes creeping, 7½ minutes crawling both high and low, with 15 minutes of prone resting.	405
Creeping and crawling as above without equipment.	305
Obstacle course with light pack and rifle. Course lasts about 5 minutes and consists of pit jump, hurdles, log crossing, ditch jump, maze run, log step climb, ditch climb up and down, 12 foot landing net climb, high tunnel run, log ladder up and down, broken field run, low tunnel crawl, rope swing, high fence climb, one log sitting bridge, walking log bridge, and	380

*Activity**Cals. per hour*

parapet ditch jump. One hour consists of 20 minutes marching, 2 circuits of course and 20 minutes rest.

Digging fox holes. Two hours consists of 20 minutes march, 80 minutes of digging (half the time spent resting) followed by 20 minutes break. 240

Rifle exercises.  $\frac{1}{2}$  hour consists of 15 minutes of standing about, and 15 minutes of exercises including 32 squat hops with rifle above head, 36 side lunges with rifle and other exercises as in calisthenics, but with rifle. 450

Table 6B. Caloric expenditure during two sample days  
(150 lb. soldier)

Time	Activity	Caloric expenditure for indicated activity (150-lb. soldier)
<i>1st Sample Day</i>		
5 AM	1st call	
5:10	Reveille	25
5:15-5:45	Calisthenics	150
5:45-6:00	Rest & fatigue duties	25
6:00-6:30	Breakfast, etc.	55
6:30-7:30	Calisthenics with rifle	450
7:30-8:30	Creeping & crawling without equipment	305
8:30-9:30	Field march, without pack or rifles	289
9:30-10:30	Obstacle course	380
10:30-11:30	Field march, without pack or rifles	289
11:30-12:00 PM.	Rest and fatigue duties	50
12:00-12:45	Dinner, etc.	85
12:45-2:45	Rest and fatigue duties	200
3:45-4:45	Boxing and Wrestling	310
5:15-5:30	Rest and fatigue duties	25
5:30-6:15	Supper, etc.	85
6:15-7:15	Close order drill	255
7:15-8:15	Calisthenics with rifle	396
8:15-9:30	Fatigue duties	162
9:30-5:00 AM.	Bed	525
	Total	4,061
<i>2d Sample Day</i>		
5 AM	1st call	
5:10	Reveille	25
5:15-5:45	Calisthenics	150
5:45-6:00	Rest and fatigue duties	25
6:00-6:20	Breakfast	35
6:20-6:45	Fatigue duties	50

Table 6B. Caloric expenditure during two sample days  
(150 lb. soldier)—Continued

Time	Activity	Caloric expenditure for indicated activity (150-lb. soldier)
<i>2d Sample Day—Continued</i>		
6:45-11:45	Road march (light pack and rifle)	2,050
11:45-12:00 PM.	Fatigue duties	30
12:00-12:20	Dinner	35
12:20-1:15	Rest and fatigue duties	100
1:15-4:15	Road march (light pack and rifle)	1,230
4:15-5:30	Fatigue duties	150
5:30-5:50	Supper	35
5:50-9:30	Off duty in area	365
9:30-5:00 AM.	Bed	525
	Total	4,805

Table 7. Acid-ash forming foods

Average servings of some common foods arranged according to their excess of acid ash \*\*

Grams	Food	Household Measure	Excess Acidity in cubic centimeters Normal Acid-HC 1
<i>Bread</i>			
30	Bread, graham	1 sl.	2.0
30	Bread, rye	1 sl.	2.0
30	Bread, white	1 sl.	2.1
30	Bread, wh. wheat	1 sl.	2.2
<i>Cereals</i>			
30	Barley	3 T.	3.12
30	Cornflakes	1 cup	1.6
30	Farina	3 T.	2.9
30	Oatmeal, dry	5 T.	3.6
30	Macaroni	4 T.	2.9
30	Rice, brown	2 T.	2.8
30	Rice, polished	3 T.	2.8
10	Rice, puffed	$\frac{1}{2}$ cup	0.9
30	Shredded wheat	1 biscuit	3.6
30	Spaghetti	4 T.	2.9
10	Wheat, puffed	$\frac{1}{2}$ cup	1.1
30	Whole wheat	3 T.	3.6
<i>Crackers</i>			
8	Graham	1	1.0
4	Saltines	1	0.3
6	Soda crackers	1	0.5
<i>Dairy products</i>			
30	Cheese, cheddar	1 piece (1"x1 $\frac{1}{2}$ "x1")	1.62
35	Egg white	1 white	1.7
50	Egg whole	1	5.5
15	Egg yolk	1 yolk	3.75



Table 7. Acid-ash forming foods—Continued

Average servings of some common foods arranged according to their excess of acid ash \*\*

Grams	Food	Household Measure	Excess Acidity in cubic centimeters Normal Acid-HCl
<i>Fish</i>			
30	Codfish (salt).....	1 oz.	3.8
90	Haddock.....	3 oz. (3"x2½"x1")	7.7
90	Halibut.....	3 oz.	8.37
90	Herring, smoked....	3 oz.	9.0
90	Mackerel.....	3 oz.	8.4
30	Oysters.....	2 m.	4.53
90	Salmon (cooked)....	3 oz.	9.63
90	Salmon, fresh.....	3 oz.	9.9
30	Sardines.....	4 sm.	3.39
30	Smelts.....	1 oz. or 2 fishes	2.6
<i>Flour</i>			
8	Flour, white.....	1 T.	0.8
<i>Fruits</i>			
100	Cranberries.....	⅔ cup	*
100	Plums.....	3 (1½" diameter)	*
50	Prunes.....	5 sm.	*
<i>Meats</i>			
15	Bacon.....	2 thick or 3 thin strips	1.5
90	Beef.....	3 oz.	9.0
90	Chicken.....	3 oz.	9.63
90	Ham, boiled.....	3 sl.	9.0
90	Ham, m. fat.....	3 sl. (4½"x4½"x1⅛")	6.7
90	Ham, smoked, lean..	3 sl. (4¼"x4½"x1⅛")	8.7
90	Ham, smoked, m...	3 sl. (4½"x4½"x1⅛")	7.5
90	Liver.....	(2¾"x2½"x1¼")	9.0
90	Pork, lean.....	½" thick	9.0
90	Pork, m. fat.....	1 chop (½" thick)	7.5
90	Veal.....	3 oz.	9.8
<i>Miscellaneous</i>			
28	Cake, plain.....	1¾" cu.	1.2
24	Cookies, sugar.....	2	1.0
45	Doughnuts.....	1	3.3
15	Mayonnaise.....	1 T.	0.21
15	Peanut butter.....	1 sc. T.	0.7
30	Peanuts.....	33-35 nuts	1.2
30	Walnuts, English..	8-16	2.2
<i>Vegetables</i>			
100	Corn, sweet.....	4 T.	1.8
100	Lentils.....	½ cup, cooked	5.1

\* These fruits "give rise to hippuric acid which remains unburned, so that they increase rather than decrease the acidity of the urine."—Sherman, Henry C., *Chemistry of Food and Nutrition*, page 278, Macmillan Co., 1932.

\*\* Waller, *Nutritive Value of Foods*, George Wahr, Ann Arbor; and Stern and Spitz, *Food for the Worker*, M. Barrows.

Table 8. Alkaline-ash forming foods

Average servings of some common foods arranged according to their excess of alkaline ash\*

Grams	Food	Household measure	Excess alkalinity in cubic centimeters normal alkali-NaOH
<i>Dairy products</i>			
240	Buttermilk.....	1 cup	5.3
30	Cream, m.....	2 T.	0.2
30	Cream, heavy.....	2 T.	0.12
30	Milk, evaporated....	2 T.	1.38
240	Milk, whole.....	1 cup	5.5
240	Milk, skim.....	1 cup	4.3
<i>Fruits</i>			
Fresh—5 percent			
100	Cantaloup.....	¼ melon	7.5
100	Muskmelon.....	¼ melon	7.5
100	Rhubarb.....	1 cup	8.5
Fresh—10 percent			
100	Grapefruit.....	½	5.6
100	Lemon juice.....	7 T.	4.0
100	Orange.....	1 m.	5.6
100	Orange juice.....	1 small glass	4.5
100	Peach.....	1 m.	5.0
100	Watermelon.....	½ thin sl.	2.7
Fresh—15 percent			
100	Apple.....	1 sm.	3.7
100	Apricots.....	2 (1⅝" diam.)	6.8
100	Grapes.....	1 sm. bunch	2.7
100	Pear.....	1 m.	3.7
100	Pineapple.....	1 sl. (¾" thick)	6.8
Fresh—20 percent			
100	Banana.....	1 sm.	3.6
100	Cherries.....	25 sm. (sour)	6.1
Dried—over 20 percent			
30	Currants.....	¼ cup	1.7
30	Dates.....	¾ stoned	3.3
30	Raisins.....	¼ cup seeded	7.1
<i>Miscellaneous</i>			
100	Applesauce.....	½ cup	4.5
30	Cocoanut.....	1 oz.	2.1
100	Grape juice.....	1 small glass	3.9
100	Ice cream, vanilla...	2 heaping T.	0.5
30	Marmalade, orange...	1 heaping T.	0.1
23	Molasses.....	1 T.	13.7
135	Pie, apple.....	⅙ pie (9" diam.)	2.2
<i>Nuts</i>			
10	Almonds.....	10 nuts	1.23
<i>Vegetables</i>			
Fresh—5 percent			
100	Asparagus.....	8 stalks	0.85
100	Beans, string (cooked).	1 serving	2.7
100	Beet greens.....	1 serving	27.0
100	Cabbage.....	1 serving	6.0
100	Cauliflower.....	1 serving	5.3
100	Celery.....	4 stalks	7.8

Table 8. Alkaline-ash forming foods—Continued

Average servings of some common foods arranged according to their excess of alkaline ash\*

Grams	Food	Household measure	Excess alkalinity in cubic centimeters normal alkali-NaOH
<i>Vegetables—Contd.</i>			
100	Cucumber.....	1 small	7.9
100	Endive.....	1 serving	7.4
100	Lettuce.....	¼ head or 16 leaves	7.4
100	Radishes.....	10	2.9
100	Sauerkraut.....	1 serving	5.7
100	Spinach.....	1 serving	27.0
100	Tomatoes.....	1 m.	5.6
Fresh—10 percent			
100	Beans, string.....	1 serving	5.4
100	Beets.....	1 serving	10.9
100	Brussels sprouts.....	1 serving	6.0
100	Carrots.....	1 serving	10.8
100	Mushrooms.....	4 large	4.0
100	Onions.....	1 serving	1.5
100	Pumpkin.....	1 serving	1.5
100	Squash, hubbard.....	1 serving	2.8
100	Turnip.....	1 serving	2.7
Fresh—15 percent			
100	Parsnips.....	1 serving	12.0
100	Peas.....	1 serving	1.2
Over 20 percent			
100	Beans, baked.....	1 serving	6.4
100	Beans, lima (cooked).....	1 serving	9.2
100	Beans, lima, fresh.....	1 serving	14.0
30	Peas, dried (cooked).....	3 T.	1.5
100	Potato, sweet.....	1 sm.	6.7
100	Potato, white.....	1 sm.	7.1

\* Waller, *Nutritive Value of Foods*, George Wahr, Ann Arbor; and Stern and Spitz, *Food for the Worker*, M. Barrows.

Table 9. Foods rich in minerals\*

Calcium	
Excellent	Good
Amaranth	Almonds
Broccoli	Artichoke, globe or French
Buttermilk	Beans, Common or kidney, dry or fresh shelled. Also snap or string
Cabbage, Savoy and nonheaded	Beans, lima, fresh shelled
Cabbage, Chinese, non-headed varieties incl. tender-greens	Burdock roots
Chard	Cabbage, headed, especially green
Cheese, Swiss	Carrots
Clams	Celeriac
Collards	Celery
Cress, garden	Cheese, cottage

Table 9. Foods rich in minerals\*—Continued

Calcium—Continued	
Excellent	Good
Dandelion greens	Chicory leaves
Kale	Chick-peas, whole seeds
Milk, whole or skimmed; evaporated, condensed, and dried	Cottonseed flour
Molasses	Crab
Mustard greens	Cream
Orach	Eggs, whole
Sesame seed, whole	Egg yolk
Turnip greens	Endive or Escarole
Watercress	Figs
	Kohlrabi
	Leeks
	Lettuce, head or leaf
	Lobster
	Maple Syrup
	Okra
	Oysters
	Parsnips
	Romaine
	Rutabagas
	Sorghum Syrup
	Soybeans, dry or as green vegetable
	Soybean flour
	Sweetpotato tops
	Tender greens, see Cabbage, Chinese
	Turnips
	Vegetable oyster or salsify

Chlorine	
Excellent	Good
Bread	Bananas
Cheese	Beef, lean
Clams	Buttermilk
Crackers	Cabbage
Ham (cured)	Celery
Oysters	Dates
Pretzels	Eggs
Sauerkraut	Lettuce
	Milk
	Molasses
	Potatoes
	Raisins
	Spinach
	Tomatoes
	Turnip greens

Cobalt	
Excellent	Good
Liver	Leafy vegetables
Pancreas	Legumes
Seafoods	Whole grains



Table 9. Foods rich in minerals\*—Continued

Copper	
Excellent	Good
Bran	Bacon
Liver	Bread
Mushrooms	Duck
Nuts	Egg Yolk
Shell fish	Fish
	Grains, whole or embryo
Iodine	
Excellent	Good
Cod liver oil	Vegetables
Fish	Cereals
Iodized salt	Dairy products and fruits
Sea foods	produced on soil which is good in iodine content
Magnesium	
Excellent	Good
Beans	Bananas
Bran	Beef
Brussels sprouts	Beets
Chard	Cabbage
Clams	Carrots
Corn	Celery
Nuts	Cheese
Oatmeal	Dates
Peas	Figs
Prunes	Fish
Raisins	Kale
Spinach	Macaroni
Whole grains	Milk
	Parsnips
	Potatoes
	Raspberries
	Turnip greens
Manganese	
Excellent	Good
Bananas	Carrots
Beans	Eggplant
Beets	Leafy vegetables
Bran	Nuts
Celery	Oysters
Cucumbers	Peppers
Dates	Raspberries
Liver	Rhubarb
Oatmeal	Tomatoes
Onions	Whole grains
Pancreas	
Peas	

Table 9. Foods rich in minerals\*—Continued

Phosphorus	
Excellent	Good
Barley, whole	Almonds
Beans, common or kidney, dry shelled	Artichokes, globe or French
Beans, lima, fresh or dry shelled	Bamboo shoots
Brazil nuts	Barley, pearled
Buttermilk	Beans, mug dry
Cheese, Swiss	Broccoli
Cottonseed flour	Brussels sprouts
Cowpeas, or blackeyed peas, dry or fresh-shelled	Buckwheat flour
Crab	Cashew nuts
Eggs, whole	Celeriac
Egg yolk	Cheese, American or Cheddar
Fish	Cheese, cottage
Liver, any kind	Chick-peas
Lobster	Clams
Meats, lean or medium fat (Beef, veal, pork or lamb) over 12% protein.	Cocoa
Milk, whole or skimmed, evaporated, condensed and dried	Collards
Oysters	Corn, green, sweet
Rice, bran	Cornmeal, whole, ground
Rice, polish	Cress, garden
Sesame seed	Dasheens or taros
Shrimp	Hazel nuts and filberts
Soybeans, dry or as green vegetable	Kohlrabi
Soybean flour	Lentils, dry
Water chestnuts (Trapa sq.)	Meats, fat (Beef, veal, pork or lamb) over 6% protein
	Millet
	Oatmeal or rolled oats
	Orach
	Parsnips
	Peanuts
	Peas
	Pecans
	Pistachio nuts
	Rice, brown
	Rye flour
	Walnuts
	Wheat flour, graham or whole wheat
	Wheat, shredded or puffed
	Wheat; whole, grain, meal, or cereals
	Wheat bran
	Wheat germ
Potassium	
Excellent	Good
Bran	Bananas
Cheese	Beets
Corn	Carrots
Eggs	Celery
Fish	Cherries
Legumes	Cucumbers
Liver	Dates
Macaroni	Figs

Table 9. Foods rich in minerals\*—Continued

Potassium—Continued	
Excellent	Good
Meat	Grapes
Milk	Green, leafy vegetables
Nuts	Onions
Oatmeal	Peaches
Prunes	Pears
Raisins	Potatoes
Seafood	Pineapples
Whole grains	Rhubarb
Yeast	Spinach
	Strawberries
	Tomatoes
	Turnips
Iron	
Excellent	Good
Apricots, dried	Barley, whole
Beans, common or kidney, dry shelled	Brains
Beet greens	Beans, snap or string
Broccoli leaves	Broccoli
Chard	Brussels sprouts
Cowpeas, or blackeyed peas, dry or fresh shelled	Cabbage greens or outer leaves
Dandelion greens	Cane sirup
Eggs, whole	Collards
Egg yolk	Cornmeal, whole ground
Heart	Dates
Kale	Dock or sorrel
Kidney	Endive or escarole
Lentils, dry	Figs, dried
Liver, any kind	Lettuce, leaf lettuce only
Meats, lean or medium fat (Beef, veal, pork or lamb) over 15% protein	Meats, fat (Beef, veal, pork, or lamb) over 10% protein
Molasses	Oatmeal or rolled oats
Mustard greens	Peas, fresh or dried, whole seeds
New Zealand spinach	Poultry, light meat
Oysters	Prunes, dried
Peaches, dried	Raisins, seedless, incl. currants
Poultry, esp. dark meat	Rye flour, whole
Shrimp	Vegetable oyster or salsify
Sorghum sirup	Wheat flour, graham or whole wheat
Soybeans, dry or as green vegetable	Wheat whole; grain, meal or cereals
Spinach	
Tongue	
Turnip greens	
Watercress—wheat bran	
Sodium	
Excellent	Good
Blood	Beef
Bread	Beets

Table 9. Foods rich in minerals\*—Continued

Sodium—Continued	
Excellent	Good
Cheese	Bran
Clams	Cantaloupes
Crackers	Carrots
Oysters	Cauliflower
Wheat germ	Celery
Whole grains	Eggs
	Kale
	Legumes
	Milk
	Nuts
	Oatmeal
	Prunes
	Pumpkins
	Radishes
	Raisins
	Spinach
	Turnips
	Whole grains
Sulfur	
Excellent	Good
Bran	Bread
Cheese	Broccoli
Cocoa	Brussels sprouts
Eggs	Cabbage
Fish	Chocolate
Legumes	Corn
Meat, lean	Dates
Nuts	Figs
Oatmeal	Kale
Shellfish	Macaroni
Yeast	Milk
	Onions
	Potatoes
	Rutabagas
	Spinach
	Watercress
	Whole grains
Zinc	
Excellent	Good
Beans	Beets
Dandelions	Broccoli
Lentils	Cabbage
Liver	Carrots
Oysters	Fish
Pancreas	Pineapple
Peas	Potatoes
Spinach	
Watercress	

\* Data from publication by: Esther Peterson Daniel, Associate Nutrition Chemist, Bureau of Home Economics, U. S. Department of Agriculture.



Table 10. Sodium Chloride

Average servings of some common foods arranged according to their content of sodium chloride\*\*

Grams	Food	Sodium Chloride
Less than 0.10 Gram		
<i>Breads and Cereals</i>		
30	Bread, white, low salt .....	0.023
30	Cornmeal .....	0.027
8	Cracker, graham .....	0.075
6	Cracker, uneeda .....	0.077
30	Cream of wheat .....	0.037
7	Flour, white .....	0.008
30	Macaroni .....	0.036
30	Matzoth .....	0.001
30	Oat, rolled .....	0.003
30	Rice, white .....	0.027
30	Shredded wheat .....	0.034
<i>Dairy Products</i>		
5	Butter, unsalted .....	0.001
30	Cheese, cottage .....	0.084
50	Egg .....	0.090
24	Egg yolk .....	0.027
18	Egg white .....	0.060
<i>Fruit</i>		
100	Apple .....	0.008
100	Applesauce .....	0.008
100	Apricots, fresh .....	0.003
100	Blueberries .....	0.010
100	Cantaloupe .....	0.067
100	Cherries .....	0.020
30	Figs .....	0.017
100	Grapefruit .....	0.008
100	Grapes .....	0.010
100	Lemon juice .....	0.005
100	Peach .....	0.010
100	Pear .....	0.020
100	Pineapple .....	0.080
30	Raisins .....	0.040
100	Raspberries .....	0.020
100	Rhubarb .....	0.059
100	Strawberries .....	0.010
100	Watermelon .....	0.010
<i>Miscellaneous</i>		
30	Almonds .....	0.024
5	Cocoa .....	0.005
100	Grape juice .....	0.003
30	Honey .....	0.014
15	Mayonnaise .....	0.064
30	Peanuts .....	0.030
30	Walnuts .....	0.020
<i>Vegetables</i>		
100	Asparagus .....	0.060
100	Brussels sprouts .....	0.070
100	Beans, lima, fresh .....	0.004
100	Beans, string .....	0.040
100	Cabbage .....	0.040
100	Carrots .....	0.050
100	Cauliflower .....	0.060

Table 10. Sodium Chloride—Continued

Grams	Food	Sodium Chloride
Less than 0.10 Gram		
<i>Vegetables—Continued</i>		
100	Corn, canned .....	0.026
100	Eggplant .....	0.040
100	Onions .....	0.034
100	Parsnips .....	0.050
100	Peas .....	0.040
100	Potato .....	0.060
100	Pumpkin .....	0.060
100	Squash .....	0.010
100	Turnip .....	0.070
100	Tomato .....	0.060
More than 0.10 Gram		
<i>Breads and Cereals</i>		
30	Bread, rye .....	0.507
30	Bread, white .....	0.130
30	Bread, whole wheat .....	0.300
<i>Dairy Products</i>		
5	Butter, salted .....	0.510
240	Buttermilk .....	0.384
30	Cheese, American .....	0.246
30	Cheese, cream .....	0.375
120	Cream, heavy .....	0.237
120	Cream, medium .....	0.158
240	Milk .....	0.432
<i>Fish</i>		
90	Cod, fresh .....	0.213
90	Haddock .....	0.171
90	Halibut .....	0.198
90	Mackerel, fresh .....	0.228
90	Salmon, canned .....	0.116
90	Salmon, fresh .....	0.213
90	Shad .....	0.153
<i>Fruit</i>		
100	Banana .....	0.206
<i>Meat and Poultry</i>		
30	Bacon .....	0.600
90	Chicken .....	0.144
90	Ham .....	3.6-4.5
90	Liver .....	0.156
90	Meat .....	0.153
<i>Miscellaneous</i>		
100	Ice cream .....	0.198
130	Molasses .....	0.157
<i>Vegetables</i>		
100	Beets .....	0.100
100	Celery .....	0.260
100	Dandelion greens .....	0.168
100	Lettuce .....	0.120
100	Potato, sweet .....	0.160
100	Spinach .....	0.120

\*\* Pattee, Alida. *Dietetics*, 18th ed., A. F. Pattee. Also Proudfit, Fairfax. *Nutrition and Diet Therapy*, 6th ed., Macmillan Co., 1934.

Table 11. Potassium

Average servings of some common foods arranged according to their content of potassium\*

Grams	Food	Potassium
More than 400 Micrograms		
100	<i>Fruit</i>	
	Avocado .....	653
30 100 100 100 100	<i>Vegetables</i>	
	Beans, lima, dried .....	518
	Dandelion greens .....	461
	Parsnips .....	417
	Potato, white .....	496
	Spinach .....	489

## 300-400 Micrograms

100	<i>Fruit</i>	
	Banana .....	373
100	Rhubarb .....	358
100 100 100 100 100 100 100 100 100 100 100 100 100	<i>Vegetables</i>	
	Beets .....	336
	Broccoli .....	395
	Carrots .....	311
	Cauliflower .....	313
	Escarole .....	381
	Kale .....	387
	Lettuce .....	311
	Mushrooms .....	384
	Potato, sweet .....	373
	Squash, winter .....	320
	Tomato juice .....	310
	Turnip .....	327
	Watercress .....	301
240	<i>Dairy Products</i>	
	Milk .....	343
30	<i>Sweets</i>	
	Molasses .....	371

## 200-300 Micrograms

100 100 30 30 100 100 100 100 100 30 30	<i>Fruit</i>	
	Cantaloupe .....	249
	Cherries .....	246
	Dates .....	203
	Figs .....	297
	Grapes .....	254
	Peaches .....	256
	Pineapple .....	214
	Plums .....	232
	Prunes .....	254
	Raisins .....	212
100	<i>Vegetables</i>	
	Beans, string .....	251

Table 11. Potassium—Continued

Grams	Food	Potassium
200-300 Micrograms		
100 100 100 100 100	<i>Vegetables—Continued</i>	
	Cabbage .....	294
	Celery .....	291
	Eggplant .....	229
	Peas .....	284
	Tomato .....	268
30	<i>Nuts</i>	
	Almonds .....	228

## 100-200 Micrograms

30 30 30 30 30	<i>Breads, Cereals</i>	
	Barley, entire .....	146
	Bread, whole wheat .....	135
	Oatmeal .....	129
	Rice, whole .....	103
	Wheat, entire .....	140
30 30 30	<i>Fish</i>	
	Cod fish .....	102
	Halibut .....	102
	Mackerel .....	125
100 100 100 100 100 100 100 100	<i>Fruit</i>	
	Apple .....	116
	Blackberries .....	181
	Grapefruit .....	198
	Grape juice .....	139
	Lemon .....	148
	Orange .....	181
	Pears .....	129
100 100	Raspberries .....	190
	Strawberries .....	145
30 30 30 30 30	<i>Meat</i>	
	Beef, lean .....	102
	Chicken .....	112
	Ham, med. lean .....	115
	Heart .....	111
	Veal .....	108
30 30	<i>Nuts</i>	
	Brazil nuts .....	181
	Walnuts .....	158
30	<i>Sweets</i>	
	Chocolate .....	133
100 100 100 100	<i>Vegetables</i>	
	Asparagus .....	187
	Cucumber .....	100
	Onions .....	183
	Squash, summer .....	150



Table 11. Potassium—Continued

Grams	Food	Potassium
Less than 100 Micrograms		
<i>Flour, Bread, Cereal</i>		
30	Barley, pearl .....	33
30	Bread, white .....	33
30	Farina .....	36
30	Flour, buckwheat .....	39
30	Flour, whole wheat .....	97
30	Flour, white .....	39
30	Macaroni .....	52
30	Rice, white .....	24
<i>Dairy Products</i>		
15	Butter .....	2
30	Cheese, hard .....	40
30	Cream .....	39
50	Egg .....	69
<i>Fish</i>		
30	Blue fish .....	95
30	Clams .....	52
30	Flounder .....	94
30	Haddock .....	94
30	Salmon .....	95
<i>Fruit</i>		
100	Blueberries .....	65
100	Cranberries .....	80
<i>Meat</i>		
30	Bacon .....	72
30	Lamb .....	91
30	Pork, med. fat .....	91

\* Sherman Chemistry of Food and Nutrition, 6th ed., Macmillan Co., 1941.

Table 12. Percentages of potassium and sodium in edible portion of foods\*\*—Continued

	Potassium	Sodium
Almonds .....	0.759	0.026
Apples .....	0.116	0.010
Apricots, dried .....	*	*
Apricots, fresh .....	0.279	0.030
Artichokes, French .....	†	0.025
Asparagus .....	0.187	0.016
Avocado .....	0.653	0.067
Bacon, 10–15% protein .....	0.239	0.820
Banana .....	0.373	0.042
Barley, entire .....	0.485	0.077
pearled .....	0.110	0.056
Beans, dried .....	1.201	0.103
Lima, dried .....	1.727	0.167
Lima, fresh .....	*	*
Snap or string .....	0.251	0.023
Beef, lean .....	0.338	0.084
Beet .....	0.336	0.079

Table 12. Percentages of potassium and sodium in edible portion of foods\*\*—Continued

	Potassium	Sodium
Beet greens .....	*	*
Blackberries		
seeds included .....	0.181	0.004
seeds removed .....	*	*
Blueberries .....	0.065	0.016
Bluefish .....	0.315	0.068
Brazil nuts .....	0.601	0.026
Bread, white .....	0.109	0.446
Whole wheat .....	(0.45)	(a)
Broccoli, E.P. ....	0.395	0.052
flowerbuds .....	0.408	0.024
leaves .....	0.374	0.064
twigs .....	0.361	0.031
Brussels sprouts .....	*	*
Butter .....	0.014	(0.22) (b)
Cabbage, headed .....	0.294	0.032
loose leaf, outer .....		
leaves or greens .....	0.402	0.065
General average .....	*	*
Cantaloupe .....	0.249	0.043
Carrots .....	0.311	0.076
Cashew nuts .....	*	*
Cauliflower .....	0.313	0.041
Celery .....	0.291	0.130
Chard .....	0.318	0.086
Cheese, hard .....	0.131	0.88(b)
Cottage cheese .....	*	*
Cherries .....	0.246	0.003
Chestnuts .....	0.529	0.038
Chicken (fowl) .....	0.372	0.091
Chocolate .....	0.442	0.056
Clams .....	0.172	0.603
Cocoa .....	0.900	0.059
Coconut, dried .....	0.693	0.053
Fresh coconut .....	0.363	0.039
Coconut milk .....	†	0.058
Codfish .....	0.339	0.096
Collards .....	*	*
Conch .....	*	*
Corn (maize) .....	0.339	0.036
meal .....	0.213	0.039
sweet .....	0.113	0.040
Cranberries .....	0.080	0.006
Cream .....	(0.13)	(0.03)
Cucumbers seeds included .....	0.140	0.010
seeds removed .....	*	*
Currants, dried .....	0.458	0.018
fresh .....	0.261	0.007
Currant juice .....	0.185	(0.006)
Dandelion .....	0.461	0.168
Dates .....	0.675	0.097
Eggplant .....	0.229	0.015
Eggs .....	0.138	0.140
Egg white .....	0.154	0.170
Egg yolk .....	0.118	0.056
Endive and escarole .....	0.381	0.060
Farina .....	0.120	0.065

Table 12. Percentages of potassium and sodium in edible portion of foods\*\*—Continued

	Potassium	Sodium
Figs, dried .....	0.990	0.066
fresh .....	0.297	0.007
Fish (c) .....		
Flounder .....	0.311	0.107
Flour, buckwheat .....	0.130	0.027
Graham or entire wheat .....	0.324	0.160(d)
white .....	0.130	0.045
Gooseberries .....	0.149	0.010
Grapefruit .....	0.198	0.004
juice .....	0.139	0.005
Grapes .....	0.254	0.011
Haddock .....	0.314	(0.66) (b)
Halibut .....	0.340	0.111
Ham, med.-lean .....	0.383	(b)
Hazelnuts .....	0.618	0.019
Heart .....	0.370	0.153
Hominy .....	0.174	†
Honey .....	†	0.005
Huckleberries .....	0.065	0.016
Kale .....	0.387	0.052
Kidney .....	0.238	0.230
Kohlrabi .....	0.371	0.050
Lamb (mutton) .....	0.301	0.084
Lemon (or juice) .....	0.148	0.013
Lentils, dry .....	0.835	0.057
Lettuce (g) .....	0.311	0.030
Liver .....	0.298	0.087
Loganberries, fresh and canned .....	0.177	0.002
Macaroni .....	0.174	0.018
Mackerel .....	0.418	0.153
Maple syrup .....	0.242	0.011
Meat (f) .....		
Milk, cows .....	0.143	0.051
Molasses† .....	1.238	0.043
Mushrooms .....	0.384	0.027
Muskmelon .....	0.249	0.043
Mutton .....	0.301	0.084
Oatmeal (oats) .....	0.431	0.071
Okra, seeds included .....	*	*
seeds removed .....	*	*
Olives (g) .....	0.809	1.189 (b)
Onions .....	0.183	0.015
Orange (or juice) .....	0.181	0.010
Oysters .....	0.204	0.471
Parsley .....	*	*
Parsnips .....	0.417	0.008
Peaches .....	0.256	0.015
Peanuts .....	0.614	0.039
Pears .....	0.129	0.008
Peas, dry .....	0.979	0.089
fresh .....	0.284	0.019
Pecans .....	*	*
Pepper, green .....	0.186	*
Persimmons .....	0.292	0.011
Pineapple .....	0.214	0.014
Plums .....	0.232	0.004

Table 12. Percentages of potassium and sodium in edible portion of foods\*\*—Continued

	Potassium	Sodium
Pork, med.-lean .....	0.304	0.069
Pork, (10% protein) .....	0.169	0.042
Potatoes .....	0.496	0.024
Prunes, dry .....	0.848	0.078
Pumpkins .....	0.457	0.054
Radishes .....	0.229	0.064
Raisins .....	0.708	0.087
Raspberries, seeds included ...	0.190	0.003
seeds removed .....	(0.14)	(0.04)
Raspberry juice .....	0.134	0.005
Rhubarb .....	0.358	0.017
Rice, entire .....	0.342	0.078
white .....	0.079	0.028
Rye, entire .....	(0.45)	0.061
flour .....	(0.45)	0.019
Salmon .....	0.316	†
Shrimps .....	0.404	(b)
Sirups (h) .....	(0.24)	†
Soybean flour .....	†	†
Spinach .....	0.489	0.084
Squash, summer, seeds removed .....	0.150	0.002
Squash, winter, seeds removed .....	0.320	0.004
Strawberries .....	0.145	0.007
Sweet Potato .....	0.373	0.027
Tapioca .....	0.020	0.004
Tomatoes, seeds included .....	0.268	(0.02)
seeds removed .....	0.229	(0.02)
Tomato juice .....	0.310	0.015
Turkey .....	0.367	0.130
Turnips .....	0.327	0.066
Turnip tops .....	0.307	0.045
Veal, med.-lean .....	0.359	0.089
Vinegar .....	0.150	0.020
Walnuts .....	0.525	0.023
Watercress .....	0.301	0.080
Watermelon .....	0.121	0.020
Wheat, entire .....	0.465	0.060
Wine, average .....	0.104	0.008

Data inclosed in parentheses are based on evidence either less consistent or less direct than in the majority of cases.

\* Doubtless present but quantitative data have not been found.

† Reports too discordant to average.

(a) Uncertain because of varying methods of breadmaking.

(b) Varies with the amount of added salt.

(c) Average fish is estimated to contain per 100 gm. of protein as follows: 1.671 gm. potassium and 0.373 gm. sodium.

(d) Probably contained some added salt.

(e) Though several investigators have published at least partial analyses, the evidence available at time of writing does not show how far the varieties of lettuce differ in composition.

(f) Average meat is estimated to contain per 100 gm. protein as follows: 1.694 gm. potassium and 0.421 gm. sodium.

(g) Pickled in brine.

(h) Data here given are averaged from analyses of sirups of several types commonly sold for use as table sirups and in cooking. Such sirups are often called molasses. The differences in mineral composition, both between the different kinds of sirups and between sirup and molasses, are relatively large.

† The figures here given for molasses, based on findings reported by Sheets and Pearson (Mississippi Agr. Expt. Sta., Tech. Bull. No. 22, 1936,) are probably applicable only to the extreme type of "genuine old-fashioned molasses of the deep South."

\*\* Sherman, H. C., Chemistry of Food and Nutrition, ed. 6, New York, The Macmillan Company, 1941, pp. 562-565.



Table 13. Carbohydrate percentages in vegetables and fruits

## A. VEGETABLES\*

(Classified as to Carbohydrate Content)

Group I 3% Carbohydrate 2.0% Protein 0.3% Fat	Group II 6% Carbohydrate 2.0% Protein 0.3% Fat	Group III 9% Carbohydrate 2.5% Protein 0.3% Fat	Group IV 12% Carbohydrate ..... .....	Group V 15% Carbohydrate 2.5% Protein 0.3% Fat	Group VI 18% Carbohydrate 2.5% Protein 0.3% Fat
Asparagus, fresh and canned Bamboo shoots Beans, green and wax Beet greens Broccoli Cabbage Cabbage, Chinese Cauliflower Celery Chard Chicory leaves Corn salad Cucumbers Dock Endive Fennel Lettuce Mungbean sprouts Mustard greens Okra, canned Poke shoots Purslane Radishes Romaine Sauerkraut, fresh and canned Seakale Sorrel Spinach, fresh and canned Spinach, New Zealand Squash, summer Tomatoes, fresh and canned Tomato juice, fresh and canned Turnip tops, fresh and canned Vegetable marrow Watercress	Beans, scarlet runner Beans, snap Beets, canned Chives Collards Dandelion greens Eggplant Kale Kohlrabi Lamb's-quarters Leeks Okra Peppers, green and red Pumpkin Pumpkin and squash, canned Tomato puree, canned Turnips	Artichokes, globe or French Asparagus—beans, pods Beets Brussels sprouts† Carrots Peas, very young Peas, canned Rutabagas	Beans†, lima, canned	Corn†, sweet, very young Jerusalem artichoke, tuber Parsnips Peas†, medium Salsify Vegetable-oyster	Beans†, baked Beans†, red kidney, canned Corn, canned Potatoes Succotash, canned

(Bureau of Home Economics, U. S. Dept. of Agriculture.)

\* The canned fruits included here are all water-packed products, designated as W.P. in the lists.

† This vegetable admits of classification on the basis of its carbohydrate content, but cannot be calculated at the protein figure for this

group. For data on its carbohydrate, protein and fat content, see NRC tables.

1 Adams, G., and Chatfield, C: J.A.D.A., 10 383, January 1935.

Table 13. Carbohydrate percentages in vegetables and fruits—Continued

B. FRUITS\*  
(Classified as to Carbohydrate Content)

Group I 3% Carbohydrate 0.7% Protein 0.3% Fat	Group II 6% Carbohydrate 0.7% Protein 0.3% Fat	Group III 12% Carbohydrate 0.7% Protein 0.3% Fat	Group IV 15% Carbohydrate 0.7% Protein 0.3% Fat	Group V 15% Carbohydrate 0.7% Protein 0.3% Fat	Group VI 18% Carbohydrate 0.7% Protein 0.3% Fat
Rhubarb, fresh and canned, w.p. Strawberries, canned, w.p.	Blackberries, canned, w.p. Blackberry juice Chayote, fruit Gooseberries, canned, w.p. Peaches, canned, w.p. Plums, canned, w.p. Strawberries Strawberry juice Watermelon	Applesauce, canned, w.p. Apricots, canned, w.p. Blackberries Cherries, red, canned, w.p. Cranberries Currants Currant juice Gooseberries Grapefruit fresh and canned, w.p. Lemons Lemon juice Limes Lime juice Limes, sweet Loganberries, canned, w.p. Loganberry juice Papayas Pears, canned, w.p. Raspberries, canned, w.p. Raspberry juice Tangerines	Apple juice Apricots Cherries, sour Grapes, canned, w.p. Guavas Mulberries Oranges Orange juice Peaches Peach juice Pineapple, fresh and canned, w.p. Pineapple juice, fresh and canned Plums, (excluding prunes) Prunes, canned, w.p. Raspberries, black and red	Apples Blueberries, fresh and canned, w.p. Blueberry juice Figs, canned, w.p. Grapes, American and European types Kumquats Loganberries Mangoes Nectarines Pears	Cherries, sweet Crab apples Figs Grape juice, unsweetened Persimmons, Japanese Pomegranates

\* The canned fruits included here are all water-packed products, designated as W.P. in the lists.

(Bureau of Home Economics, U. S. Dept. of Agriculture.)



Table 14. Foods rich in vitamins\*

Vitamin A			Thiamin (Vitamin B1)		
Excellent	Good	Excellent	Good	Good	Fair
Fish-liver oils	Cream	Pork, lean	Egg yolk	Fish roe	Milk, fresh
Liver	Kidney	Chicken	Brains	Codfish	(whole or skim)
Fish roe	Oysters	Kidney	Beef, lean	Sardines	Turnips
Egg yolk	Milk, whole	Liver	Mutton, lean	Whiting	Broccoli
Butter	Red salmon	Peas, green	Potatoes	Lettuce	Kohlrabi
Cheese	Asparagus, green	Beans, lima, green	Sweet corn	Collards	Eggplant
Kale	Okra	Wheat germ	Sweet potatoes	Kale	Bananas
Spinach	Brussels sprouts	Corn germ	Brussels sprouts	Onions	Watermelon
Dandelion greens	Artichokes, globe	Rye germ	Cauliflower	Leeks	Raspberries
Dock	Tomatoes, yellow	Rice polishings	Cabbage	Tomatoes	Blackberries
Escarole		Wheat bran	Mushrooms	Beans, wax	
Chard	Avocados	Oats	Spinach	Beans, green	
Lamb's-quarters	Guavas	Wheat	Watercress	Beets	
Turnip tops	Cantaloupe	Rye	Turnip greens	Parsnips	
Lettuce, green	Blackberries	Barley	Garden cress	Carrots	
Collards	Black currants	Rice, brown			
Watercress	Blueberries	Peanuts	Prunes	Figs	
Chinese cabbage	Bananas	Soybeans	Avocados	Plums	
Broccoli	Pineapples	Cowpeas	Pineapple	Pears	
Mustard greens	Olives, green	Beans, navy	Oranges	Apples	
Beet greens	Olives, ripe	Peas, dried	Grapefruit	Cantaloupe	
Carrots	Dates		Tangerine	Dates	
Sweet potatoes	Oranges, deep		Hazelnuts		
Squash, yellow	yellow juice		Chestnuts		
Peppers, sweet			Brazil nuts		
Tomatoes, red	Corn meal, yellow		Walnuts		
Peas, green			Almonds		
Beans, green			Pecans		
Apricots					
Papayas					
Mangoes					
Prunes					
Peaches, yellow					

\* Data from Publication by Esther Peterson Daniel, Associate Nutrition Chemist U. S. Dept. of Agriculture, Bureau of Home Economics.

Table 14. Foods rich in vitamins\*—Continued

Riboflavin (Vitamin B2)			Niacin	
Excellent	Good	Fair	Good to Fair	Sources
Liver	Milk, fresh	Bananas	Liver	Peas, green
Kidney	(whole or skim)	Figs, cured	Salmon	Collards
Heart	Buttermilk	Grapefruit	Rabbit	Turnip greens
Muscles meats, lean	Whey	Oranges	Beef, fresh	Kale
Eggs		Apricots	Beef, corned	Tomato juice
Cheese	Peas	Guavas	Pork, lean	Cowpeas
Milk, dried,	Beans, lima	Papayas	Chicken	Soybeans
(whole or skim)	Spinach	Muskmelons	Buttermilk	Cabbage, green
Milk, condensed	Water cress	Apples	Egg yolk	Spinach
Milk, evaporated	Collards		Milk, skim	Mustard greens
	Endive		(fresh and dried)	Wheat germ
Turnip tops	Broccoli		Milk, evaporated	Peanut meal
Beet tops	Lettuce, green		Haddock	Peas, green
Kale	Cabbage			(dried)
Mustard greens	Cauliflower			
	Carrots			
Wheat, germ portion	Beets			
Peanuts				
Soybeans	Pears			
	Avocados			
	Prunes			
	Mangoes			
	Peaches			
	Wheat, whole grain			
	Dried legumes			

\* Data from Publication by Esther Peterson Daniel, Associate Nutrition Chemist U. S. Dept. of Agriculture, Bureau of Home Economics.



Table 14. Foods rich in vitamins\*—Continued

Ascorbic Acid (Vitamin C)		Vitamin D		
Excellent	Good	Excellent	Good	Small amounts
Liver	Kidney	Fish liver oils	Salmon	Liver
Brain		Egg yolk (from hens on diet high in vitamin D)	Sardines	Cream
	Endive		Eggs	Milk, whole
Collards	Cucumbers		Butter	Oysters
Turnip greens	Potatoes, white	Foods enriched with vitamin D by the Steenbock process of irradiation with ultraviolet light.		
Mustard greens	Sweet potatoes			
Kale	Beans, green			
Water cress	Parsnips			
Spinach	Rhubarb			
Dandelion greens	Leeks			
Peppers, sweet	Onions			
Kohlrabi	Artichokes, globe			
Rutabagas				
Turnips	Pineapple			
Brussels sprouts				
Cauliflower	Cranberries			
Cabbage	Papayas			
Broccoli	Bananas			
Asparagus	Peaches			
Tomatoes, fresh and canned	Apples			
Peas, green	Avocados			
Corn salad	Watermelon			
Radishes				
Guavas				
Mangoes				
Oranges				
Lemons				
Grapefruit				
Tangerines				
Currants				
Strawberries				
Gooseberries				
Raspberries				
Cantaloupe				
Seeds, sprouted				

## Vitamin K (Antihemorrhagic)

Quantitative data on the distribution of this vitamin are difficult to obtain. Consequently, it is impossible to classify the different foodstuffs as to source, that is, good or excellent.

Cabbage  
Carrot greens  
Cauliflower  
Egg yolk

Hempseed  
Kale  
Liver  
Rice bran

Spinach  
Soy bean oil  
Tomatoes

\* Data from Publication by Esther Peterson Daniel, Associate Nutrition Chemist U. S. Department of Agriculture, Bureau of Home Economics.

Nutritional Charts for Medical and Other Special Lists; 10th Edition, Research Department of H. J. Heinz Co., Pittsburgh, Pa., September 1941.

Table 15. Percentage composition of alcoholic beverages

	Alcohol	Carbo- hydrate	Protein	Fat
<i>Malt Liquors</i>				
<i>American:</i>				
Ale, cream ale, carbon- ated ale.....	3.8	3.5	0.5	—
Bock beer.....	4.5	6.0	0.7	—
Lager beer (draught or bottle).....	3.7	4.0	0.5	—
Porter, stout.....	6.0	5.0	0.6	—
Stock ale, still ale, India ale.....	6.0	5.0	0.6	—
"3.2" Beer.....	3.0	3.0	0.5	—
<i>European:</i>				
Ale, porter, stout, English for export..	6.0	5.0	0.6	—
Bock beer and related special beers.....	4.5	6.0	0.8	—
Lager beers, Central European.....	3.7	4.0	0.5	—
Munich beer (usually dark).....	3.5	4.5	0.6	—
Pilsener beer (always light).....	3.8	3.5	0.5	—
Salvator Maerzen beers.	4.5	6.0	0.8	—
Weiss beer.....	2.0	2.0	0.5	—
<i>Wines</i>				
<i>American:</i>				
California red wines claret, Zinfandel, Chianti, Burgundy, etc.....	10.0	0.5	0.2	—
California white wines Chablis, Riesling, Rhine.....	10.0	0.5	0.2	—
California white wine Sauterne.....	10.5	4.0	0.2	—
Champagne from Calif. & New York State..	11.0	3.0	0.2	—
<i>Sweet and Dessert Wines:</i>				
Catawba (white).....	13.0	12.0	0.2	—
Muscadelle.....	15.0	14.0	0.2	—
Port.....	15.0	14.0	0.3	—
Sherry.....	15.0	8.0	0.3	—
<i>European:</i>				
Bordeaux wine (French).....	10.5	2.0	0.2	—
Champagne, white, dry.....	11.5	1.0	0.0	—
Champagne, white, sweet.....	11.0	10.0	0.2	—
Claret (red), French, Italian, Spanish....	8.0	0.5	0.2	—
Madeira wine.....	14.0	3.0	0.2	—
Moselle wine (German).	8.5	0.5	0.2	—
Rhine wine (German) like Hockheimer "hock".....	9.5	1.0	0.2	—
Sauterne wine (French).	10.5	2.0	0.2	—

Table 15. Percentage composition of alcoholic beverages—Cont.

	Alcohol	Carbo- hydrate	Protein	Fat
<i>Sweet and Dessert Wines:</i>				
Malaga (Spanish).....	10.5	20.0	0.3	—
Marsala, Malvasia, Lacrimae Christi (Italian).....	12.0	5.0	0.3	—
Port Wine (Portuguese) Douro.	15.0	6.0	0.3	—
Sherry, Amontillado, Tarragona, etc.....	15.0	3.0	0.3	—
Tokay (Hungarian)...	10.0	12.0	0.3	—
Vermouth (French)*..	15.0	1.0	—	—
Vermouth (Italian) Dubonnet, etc.*....	18.0	12.0	—	—
<i>Distilled Liquors</i>				
Absinthe (Swiss).....	35.0	—	—	—
Akvavit (Norwegian)..	35.0	—	1.0	—
Applejack.....	35.0	—	—	—
Arrac (Palm wine dist.).....	35.0	—	—	—
Bacardi Rum.....	35.0	—	—	—
Bitters, Angostura, orange, Boonekamp..	35.0	—	—	—
Brandy, apple.....	35.0	—	—	—
Brandy, apricot.....	30.0	—	—	—
Brandy, California....	35.0	—	—	—
Brandy, Cherry.....	44.0	—	—	—
Brandy, cognac (French).....	35.0	—	—	—
Gin, dry.....	35.0	—	—	—
Kirschwasser.....	35.0	—	—	—
<i>Liquers, Cordials:</i>				
Anisette.....	35.0	35.0	—	—
Apricot brandy.....	30.0	30.0	—	—
Benedictine.....	33.0	33.0	—	—
Chartreuse.....	33.0	33.0	—	—
Cherry brandy.....	23.0	30.0	—	—
Creme apricot.....	30.0	30.0	—	—
Creme de cacao.....	20.0	30.0	—	—
Creme de menthe.....	30.0	35.0	—	—
Creme de Violette....	30.0	30.0	—	—
Creme Yvette.....	30.0	30.0	—	—
Curacao (orange peel).	30.0	20.0	—	—
Kummel (caraway seed).....	30.0	10.0	—	—
Maraschino (cherry)..	30.0	40.0	—	—
Swedish Punch.....	30.0	25.0	—	—
<i>Rum, Jamaica,</i>				
Martinique.....	35.0	—	—	—
Sloe Gin.....	28.0	15.0	—	—
Vodka.....	45.0	—	—	—
<i>Whiskies:</i>				
Bourbon.....	40.0	—	—	—
Irish.....	40.0	—	—	—
Rye.....	40.0	—	—	—
Scotch.....	35.0	—	—	—



Table 15. *Percentage composition of alcoholic beverages—Cont.*

	Alcohol	Carbo- hydrate	Protein	Fat
<i>Miscellaneous</i>				
<i>Cider, American:</i>				
Sweet.....	0.1	10.5	—	—
Fermented (hard)....	5.2	1.0	—	—
Grenadine syrup.....	—	60.0	—	—
Maraschino cherry juice.....	—	35.0	—	—
Raspberry syrup.....	—	60.0	—	—

\*Vermouth and Dubonnet contain extracts of herbs, giving them distinctive properties.

Table 16. *Average servings*

<i>Food</i>	<i>One portion</i>
Bacon.....	3 strips
Butter.....	1 square
Bread.....	1 slice
<i>Cereal:</i>	
Cooked.....	½ cup
Dry.....	1 individual package
<i>Fruits:</i>	
Cooked.....	½ cup
Raw.....	1 medium size orange or its equivalent
Jelly or Jam.....	1 tablespoonful
Meat.....	3" x 2½" x 1"
<i>Vegetables:</i>	
Raw.....	1 average tomato or equivalent
Cooked.....	½ cup

In Metric System measurements, where not otherwise specified, the Average Serving is 100 grams.

## TABLE OF FOOD COMPOSITION

1. GENERAL. The table of food composition has been based upon average servings and other frequently-used measures in gram weight. Foods similar in nutrient content are grouped into classes used by the Army for convenience in determining the adequacy of troop rations. Several additional food classes have been included because of their frequent use in hospital diets.

Many of the items are listed with the different states in which they are used for purposes of nutritive analysis. For example:

Pork Chops, Med. Fat., *A.P.*  
Pork Chops, Med. Fat., *E.P.*  
Pork Chops, Med. Fat., Cooked

The percentage of waste from the amount of food as purchased (*A.P.*) to the amount of the edible portion (*E.P.*) is listed in a separate column.

In canned foods where "drained solids" and "solids and liquids" are listed separately, the percentage of drained solids is also included.

Items currently used in Army field ration B are included in the table and indicated with a (B) symbol. This ration is commonly used by troops overseas and on maneuvers.

## 2. ABBREVIATIONS AND SYMBOLS.

*A.P.*—as purchased.  
(*B*)—Army B-Rations.  
*E.P.*—edible portion.  
*fr.*—fresh.  
*gm.*—gram.  
*I.U.*—international unit.  
*Med.*—medium.  
*mg.*—milligram.  
*Proc.*—processed.  
( )—tentative data if used around figures.  
(—%)—percentage of drained solids.

## 3. CONVERSION FACTORS FOR VITAMINS.

Vitamin A	—1 International Unit—activity of 0.6 micrograms beta carotene.
Thiamin (Vitamin B <sub>1</sub> )	—1 International Unit—3 micro- grams thiamin hydrochloride.
Ascorbic Acid (Vitamin C)	—1 International Unit—0.05 mg as- corbic acid.
Riboflavin (Vitamin B <sub>2</sub> )	—1 Sherman Unit—2.5 micrograms riboflavin.
Vitamin D	—1 International Unit—activity of .025 micrograms Calciferol.
1 microgram	—1 millionth of a gram.
1 usp unit	—1 International Unit.

## 4. SOURCES OF DATA.

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National Research Council.  
"Food Values of Portions Commonly Used."  
Bowes and Church; 3d edition.  
College Offset Press, Phila., 1940.  
"Dietetics for the Clinician", Bridges; 4th edition, Lea  
and Febiger, Philadelphia, 1941.  
The Nutritive Value of "Chinese Fruits and Vegetables".  
Compilation by Dr. Woot Tsuen Wu, Foods and Nutri-  
tion Division, Bureau of Human Nutrition and Home  
Economics, Agri. Res. Adm. U.S.D.A., 1943.  
The Canned Food Reference Manual; American Can Co.,  
N. Y.; 2d edition, 1943, Rogers, Kellogg, Stillson, Inc.

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	Weight in gms.	Waste %	Calories	Protein gm.	Fat gm.	Carbo- hydrate gm.	Calcium mg.	Phos- phorus mg.	Iron mg.	Vitamin A I.U.	Thiamin mg.	Ribo- flavin mg.	Niacin mg.	Ascorbic acid mg.
<i>I. Meat, Fish, and Poultry</i>														
Anchovies, canned.....	12		20	2.3	1.2	0.04	3.0	26	0.13					
Anchovies, paste.....	7		14	1.4	0.8	0.3	2.0	16	0.08					
Bacon, proc., raw, med. fat. <i>A.P.</i> .....	100	6	589	8.6	61.2	1.0	12.0	102	1.4		.26	.13	.82	
Bacon, proc., raw, med. fat. <i>E.P.</i> .....	100		625	9.1	65.0	1.0	12.0	108	1.5		.28	.14	.88	
Bacon, cooked, 3 strips.....	15		94	1.4	9.8	0.2	1.0	37	0.53					
Bacon, canned (B), <i>A.P.</i> or <i>E.P.</i> .....	100		721	6.7	76.7	(1)	9.0	38	1.2		.16	.10	.90	
Bacon, Canadian, fried.....	60		90	16.2	2.8	0	16.2	131	1.38					
Bass, Black Sea, <i>E.P.</i> .....	100		88	19.2	1.2	0	21.0	220	1.06					
Bass, White Sea, <i>E.P.</i> .....	100		90	21.4	0.5	0	23.0	246	1.18					
Beef, chipped or dry, <i>A.P.</i> or <i>E.P.</i> .....	100		180	30.0	6.5	0.4	17.0	323	4.5		.08	.31	(6.48)	
Beef, chipped or dry, creamed.....	120		185	16.9	9.9	7.1	103.0	227	2.26		.05	.10	1.66	
Beef, corned, lean, <i>A.P.</i> or <i>E.P.</i> .....	100		191	18.4	13.0	0	11.0	198	2.8					1.0
Beef, corned, lean, cooked.....	100		271	14.3	23.8		16.0	291	4.10					1.0
Beef, corned, canned, <i>A.P.</i> or <i>E.P.</i> .....	100		238	22.1	16.6	(0)	18.0	113	3.8	40	.02	.18	2.86	
Beef, cuts, med. fat, <i>A.P.</i> .....	100	11	177	17.2	12.0	0	10	185	2.6	(30)	.10	.19	4.02	1.0
Beef, cuts, med. fat, <i>E.P.</i> .....	100		194	19.3	13.0	0	11	208	2.9	(40)	.11	.21	4.52	1.0
Beef cuts cooked, lean, dry, overdone.....	100		190	34.0	6.0	0	20	367	5.10					
Beef cuts cooked, lean, med. done.....	100		174	30.0	6.0	0	17	323	4.50					
Beef cuts cooked, lean, rare.....	100		162	27.0	6.0	0	15	291	4.05					
Beef cuts cooked, medium fat, dry.....	100		282	30.0	18.0	0	17	323	4.50					
Beef cuts cooked, medium fat, med.....	100		270	27.0	18.0	0	15	291	4.05					
Beef cuts cooked, med. fat, rare.....	100		254	23.0	18.0	0	13	248	3.45					
Beef cuts cooked, med. fat, med. done.....	100		358	22.0	30.0	0	13	237	3.30					
Beef cuts cooked, very fat, med. done.....	100		473	17.0	45.0	0	10	183	2.55	(40)	.02	.24	5.46	2.0
Beef, roast, canned (B), <i>A.P.</i> or <i>E.P.</i> .....	100		164	25.0	7.1	0	9	164	3.3	20	.50	.89	7.85	
Beef, hearts, lean, <i>A.P.</i> or <i>E.P.</i> .....	100		104	16.9	3.7	0.7	10	236	6.2					
Brains, calf's, <i>E.P.</i> .....	100		123	10.6	9.0									
Brains, calf's, cooked.....	100		100	12.0	5.8		16.0	355	2.0					
Bluefish, cooked.....	70		83	14.4	2.8	0	16	165	0.79					
Butterfish, cooked.....	50		82	9.1	5.1	0	10	104	0.50					
Caviar, canned.....	10		13	2.6	0.3	0	3	30	0.14					
Chicken, boned, canned (B), <i>A.P.</i> or <i>E.P.</i> .....	100		192	29.7	7.9	0	16	218	3.2	5	.01	.16	4.84	2.0
Chicken, Fr. roasters, <i>A.P.</i> .....	100	39	119	12.3	7.7	0	10	133	2.0	(5)	.06	.12	4.52	3.0
Chicken, Fr. roasters, <i>E.P.</i> .....	100		194	20.2	12.6	0	16	218	3.2	(5)	.10	.20	7.40	4.0
Chicken, cooked, med. fat.....	100		198	26.2	10.4		11	271	2.6	(5)	.11	.20	6.25	4.0
Chili con carne (without beans), canned (B), <i>A.P.</i> or <i>E.P.</i> .....	100		199	9.2	14.5	8	18	152	0.7	160	.01	.09	1.90	2.0
Clam chowder, <i>E.P.</i> .....	100		111	4.4	4.6	13	80	68	1.8	110	.09	.08	(0)	
Clams, long, <i>E.P.</i> .....	100		78	13.6	1.7	2.1	123	105	4.10					
Clams, round, <i>E.P.</i> .....	100		76	11.1	0.9	5.9	106	116	4.40					



(Foods arranged alphabetically within the 15 basic food groups as outlined in text Table II)

	Weight in gms.	Waste %	Calories	Protein gm.	Fat gm.	Carbo- hydrate gm.	Calcium mg.	Phos- phorus mg.	Iron mg.	Vitamin A I.U.	Thiamin mg.	Ribo- flavin mg.	Niacin mg.	Ascorbic acid mg.
<i>I. Meat, Fish, and Poultry—Contd.</i>														
Cod bits, raw, <i>A.P.</i> or <i>E.P.</i> .....	100		70	16.5	0.4		10	189	3.0		.10	.07	2.17	2.0
Cod bits, dried, creamed.....	120		189	13.1	11.4	8.3	99	144	0.37					
Cod bits, cooked, fish cake.....	60		135	6.5	7.7	9.8	12	65	0.76					
Crab, canned.....	60		59	10.1	1.7	0.8	12	116	0.56					
Crab, deviled.....	110		215	10.8	15.1	8.9	108	159	0.61					
Crab, <i>E.P.</i> .....	100		110	19.8	3.4	0	18.0	191	0.78					
Crab, boiled.....	60		75	11.5	3.1	0	17.4	210	0.69					
Croaker, cooked.....	70		64	12.5	1.5	0	14	144	0.51					
Duck, Fr., <i>A.P.</i> .....	100	36	206	10.2	18.3	0	6	110	1.5		(.08)	(.26)	(5.04)	
Duck, Fr., <i>E.P.</i> .....	100		321	16.0	28.6	0	9	172	2.4		(.13)	(.41)	(7.89)	
Eel, American, <i>E.P.</i> .....	100		156	18.6	9.1	0	20	213	1.02					
Eel, American, smoked.....	50		162	9.3	13.9	0	10	107	0.51					
Finnan haddie, <i>E.P.</i> .....	100		158	17.0	10.0	0	19	195	0.90					
Finnan haddie, creamed.....	150		272	16.7	17.2	12.5	155	265	0.99					
Fish, misc. raw, <i>A.P.</i> .....	100	33	66	12.7	1.7	0	14	146	0.7	80	.06	.11	4.17	
Fish, misc. raw, <i>E.P.</i> .....	100		99	19.0	2.5	0	21	218	1.0	120	.09	.17	6.22	
Flounder, <i>E.P.</i> .....	100		62	14.2	0.6	0	36	163	0.75					
Flounder, cooked.....	70		45	10.4	0.4	0	25	114	0.49					
Frankfurters, <i>A.P.</i> or <i>E.P.</i> .....	100		200	15.0	14.1	3.0	9	164	2.3		.20	.25	2.49	
Frog's legs, cooked.....	50		34	8.2	0.15	0	9	94	0.18					
Haddock, raw, <i>A.P.</i> .....	100	52	34	8.3	0.1	0	9	95	0.5		.04	.06	.40	
Haddock, raw, <i>E.P.</i> .....	100		72	17.2	0.3	0	19	197	0.9		.09	.12	.90	
Haddock, smoked.....	60		57	13.3	.02	0	14	153	0.73					
Haddock, cooked.....	100		72	17.2	0.3	0	19	197	0.85					
Halibut, <i>E.P.</i> .....	100		121	18.6	5.2	0	8.0	200	1.00					
Halibut, steamed.....	100		112	24.1	1.7	0	13.0	225	0.60					
Herring, <i>E.P.</i> .....	100		136	19.0	6.7	0	21.0	224	1.10					
Herring, pickled.....	60		131	12.2	9.1	0								
Herring, smoked.....	60		114	11.8	7.4	0	24.0	254	1.20		.43	.24	3.04	
Ham, canned, <i>A.P.</i> or <i>E.P.</i> .....	100		252	17.5	20.2	0	20.0	189	2.6					
Ham, Fr., med. fat, <i>A.P.</i> .....	100	14	295	13.1	27.0	0	17.0	141	2.0		1.01	.23	4.76	
Ham, Fr., med. fat, <i>E.P.</i> .....	100		340	15.2	31.0	0	20.0	164	2.3		1.18	.27	5.53	
Ham, cooked, med. fat.....	100		150	26.4	4.9	0	12.0	218	1.7					
Ham, smoked, med. fat, <i>A.P.</i> .....	100	13	330	14.7	30.0	0.3	17.0	158	2.2		.57	.18	2.89	
Ham, smoked, med. fat, <i>E.P.</i> .....	100		384	16.9	35.0	0.3	20.0	182	2.5		.66	.21	3.30	
Ham, deviled.....	30		137	5.7	12.9	0	3.0	61	0.86					
Hamburger steak, <i>A.P.</i> or <i>E.P.</i> .....	100		156	21.3	7.9	0	12.0	230	3.2		.08	.18	5.11	
Hash, cornbeef, canned (B), <i>A.P.</i> or <i>E.P.</i> .....	100		135	8.7	8.9	(5)	10.0	(90)	(1.3)		.02	.13	2.00	
Hash, corn beef, dehydrated, canned (B), <i>A.P.</i> or <i>E.P.</i> .....	100		410	49.2	11.2	28	60.0	433	3.2	60	.17	.35	12.30	

*I. Meat, Fish, and Poultry—Contd.*

	Weight in gms.	Waste %	Calories	Protein gm.	Fat gm.	Carbo- hydrate gm.	Calcium mg.	Phos- phorus mg.	Iron mg.	Vitamin A I.U.	Thiamin mg.	Ribo- flavin mg.	Niacin mg.	Ascorbic acid mg.
Hash, meat and vegetables, canned (B), A.P. or E.P.	100		122	10.7	4.3	10	15.0		0.6	30	.03	.11	2.44	6.0
Head cheese, A.P. or E.P.	100		243	15.0	20.3	0	8.0	157	2.2		.06	.12	1.08	
Heart, beef, lean, E.P.	100		104	16.9	3.7	0.7	9.0	172	4.8					
Kidney, beef or veal, E.P.	100		137	15.0	8.1	0.9	9.0	171	4.0					
Kidney, beef or veal, cooked	60		82	9.0	4.9	0.5	6.0	109	2.46					
Lamb, leg, A.P.	100	17	190	14.9	14.5	0	9	161	1.2		.17	.24	5.22	
Lamb, leg, E.P.	100		230	18.0	17.5	0	10	194	1.5		.20	.30	6.30	
Lamb, leg, cooked	70		161	12.6	12.3	0	8	148	1.05					
Lamb Chops, cooked	50		179	10.9	15.0	0	7	117	1.65					
Liver, beef, A.P. or E.P.	100		132	19.7	3.2	6	11	373	8.2	27,500	.32	2.54	14.20	31
Liver, beef, fried	100		256	29.0	14.5	2.4	9	576	21.70					
Liver sausage or pudding	60		195	16.7	20.6	1.5								
Lobster, canned	60		52	11.0	0.8	0.2	37	170	0.84					
Lobster, cooked or E.P.	60		50	9.7	1.1	0.3	37	170	0.84					
Lobster, paste	7		13	1.5	0.7	0.1	4	19	0.09		.30	.21	2.67	
Luncheon meat, canned A.P. or E.P.	100		285	13.3	21.7	9	20	170	2.0					
Mackerel, E.P.	100		157	22.2	7.6	0	11	273	0.90					
Mackerel, salt	60		180	11.1	15.1	0								
Mackerel, fried	100		182	20.0	11.3	0	28	280	1.20					
Mackerel, smoked	100		212	23.8	13.0	0								
Oysters, fr., solids and liquor, A.P. or E.P.	100		51	6.0	1.2	4	68	172	7.1	210	.18	.22	1.20	
Perch, yellow, raw, dressed, A.P.	100	39	50	11.4	0.5	0	12	131	0.6		(.05)	.04	1.04	
Perch, yellow, raw, dressed, E.P.	100		82	18.7	0.8	0	20	215	1.0		(.09)	.07	1.70	
Pigs feet, Fr. A.P.	100	65	125	10.2	9.3	0	6	110	1.5		(.30)	(.11)	(2.31)	
Pigs feet, Fr. E.P.	100		356	29.1	26.4	0	17	315	4.3		(.86)	(.32)	(6.65)	
Pigs feet, cooked	100		155	14.4	10.5	0.6								
Porgy, E.P.	100		120	18.6	5.1	0								
Porgy, cooked	70		66	15.0	0.6	0	16	166	0.83					
Pork bellies, Fr. med fat, A.P.	100	7	502	8.5	52.0	0	5	92	1.3		(.65)	(.13)	(2.56)	
Pork bellies, Fr. med. fat, E.P.	100		540	9.1	56.0	0	5	98	1.4		(.70)	(.13)	(2.75)	
Pork, Boston butts, raw, med. fat, A.P.	100	5	260	15.8	22.0	0	9	170	2.4		.67	.28	3.88	
Pork, Boston butts, raw, med. fat, E.P.	100		273	16.6	23.0	0	10	179	2.5		.71	.30	4.07	
Pork chops, med. fat, A.P.	100	19	235	13.3	20.0	0	16	143	2.0		1.18	.18	4.05	
Pork chops, med. fat, E.P.	100		291	16.4	25.0	0	20	176	2.5		1.45	.22	5.00	
Pork chops, med. fat, cooked	70		253	20.4	19.0	0	7	251	2.03		.97	.19	4.23	
Pork, Fr., loin, med. fat, A.P.	100	19	233	13.3	20.0	0	16	143	2.0		1.20	.23	5.22	
Pork, Fr., loin, med. fat, E.P.	100		291	16.4	25.0	0	20	176	2.5		.85	.23	3.26	
Pork, misc. cuts, A.P.	100	15	231	14.1	19.4	0	8	152	2.1		1.00	.28	3.83	
Pork, misc. cuts, E.P.	100		272	16.5	22.9	0	10	179	2.5					



(Foods arranged alphabetically within the 15 basic food groups as outlined in text Table II)

	Weight in gms.	Waste %	Calories	Protein gm.	Fat gm.	Carbo- hydrate gm.	Calcium mg.	Phos- phorus mg.	Iron mg.	Vitamin A I.U.	Thiamin mg.	Ribo- flavin mg.	Niacin mg.	Ascorbic acid mg.
<b>I. Meat, Fish, and Poultry—Contd.</b>														
Pork, misc. cuts, lean, cooked	100		169	29.7	5.6	0	17	320	5.50					
Pork, salt, fat, <i>A.P.</i>	100	4	753	3.7	82.0	0	2	40	0.6		(.04)	.06	(0)	
Pork, salt, fat, <i>E.P.</i>	100		783	4.0	85.2	0	2	42	0.6		(.04)	.06	(0)	
Pork, shoulder, med. fat, <i>A.P.</i>	100	12	291	13.0	26.6	0	18	140	1.9		.65	.24	4.53	
Pork, shoulder, med. fat, <i>E.P.</i>	100		333	14.8	30.4	0	21	159	2.2		.74	.27	5.15	
Pork, shoulder, med. fat, cooked	100		442	19.5	40.4	0	7	185	2.30					
Salami, <i>E.P.</i>	100		428	23.9	36.8	0								
Salmon, all kinds, canned, <i>A.P.</i>	100	2	165	20.2	9.4	0	66	283	0.9	280	.02	.16	7.67	
Salmon, all kinds, canned, <i>E.P.</i>	100		169	20.6	9.6	0	67	289	0.9	290	.02	.16	7.82	
Salmon, fresh, <i>A.P.</i>	100	11	194	15.5	14.7	0	12	215	0.9	(260)	.19	.12	6.30	8.0
Salmon, fresh, <i>E.P.</i>	100		218	17.4	16.5	0	13	242	1.0	(290)	.21	.14	7.10	9.0
Salmon, fresh, steamed	100		193	19.1	13.0	0	29	302	0.80					
Salmon, fresh, smoked	30		51	6.5	2.8	0	20	85	0.39					
Sardines, canned	30		62	7.7	3.3	0.4	11	110	0.54					
Sausages, bologna, <i>A.P.</i> or <i>E.P.</i>	100		208	14.4	15.4	3	8	155	2.2		.32	.25	3.30	
Sausages, Liverwurst, <i>A.P.</i> or <i>E.P.</i>	100		260	16.7	20.6	2	10	178	2.5	(6,600)	.19	1.30	5.20	
Sausages, misc. <i>A.P.</i>	100	7	380	21.9	32.5	0	13	236	3.3		.20	.21	2.89	
Sausages, misc. <i>E.P.</i>	100		408	23.5	34.9	0	14	254	3.5		.21	.23	3.11	
Sausages, pork, Fr., <i>A.P.</i> or <i>E.P.</i>	100		446	10.2	44.2	0	6	116	1.6		.26	(.15)	(3.35)	
Sausages, pork, Fr., cooked	60		200	6.9	14.9	7.6	12	85	1.98					
Sausages, pork, canned, (B) <i>A.P.</i> or <i>E.P.</i>	100		236	13.2	20.4	0	17	(116)	2.5		.09	.23	3.35	
Sausages, Salami, <i>A.P.</i>	100	8	393	22.0	33.9	0	13	236	3.3		.22	.19	2.67	
Sausages, Salami, <i>E.P.</i>	100		427	23.9	36.8	0	14	257	3.6		.24	.21	2.91	
Sausages, Vienna, canned, (B), <i>A.P.</i> or <i>E.P.</i>	100		308	12.5	28.6	0	65		0.6		.09	.12	2.23	
Scallops, Fr., edible muscle, <i>A.P.</i> or <i>E.P.</i>	100		72	14.8	0.1	3	115	40	3.0				1.40	
Scallops, cooked	100		105	22.4	1.4	tr.	115	338	3.0					
Shad, <i>E.P.</i>	100		163	18.7	9.8	0	20	216	1.0					
Shad roe, <i>E.P.</i>	60		71	12.5	2.3	0	14	145	0.72	60	.01	.03	1.1	
Shrimp, canned, <i>A.P.</i> or <i>E.P.</i>	100		82	17.8	0.8	0.8	75	153	1.2					
Shrimp, canned, cooked	65		60	14.1	0.5	0	208	175	1.17					
Smelts, <i>E.P.</i>	100		87	17.6	1.8	0	19	202	1.0					
Smelts, fried	100		410	25.0	30.8	5.0	686	535	3.30					
Spareribs, Fr., med. fat, <i>A.P.</i>	100	40	206	8.8	19.0	0	5	95	1.3		(.68)	(.13)	(2.09)	
Spareribs, Fr., med. fat, <i>E.P.</i>	100		346	14.6	32.0	0	9	158	2.2		(1.13)	(1.22)	(3.48)	
Stew, meat and vegetable, canned (B), <i>A.P.</i> or <i>E.P.</i>	100		119	9.1	5.2	9	26	121	1.4	1,750	.04	.13	2.57	4
Sturgeon, <i>E.P.</i>	100		90	18.1	1.9	0	24	158	1.20					
Sweetbreads, <i>E.P.</i>	100		156	19.2	8.8									
Sweetbreads, stewed	60		105	13.6	5.5	0	8.4	358	0.96		.28	.22	6.12	
Tongue, Fr., beef, med. fat, <i>A.P.</i> or <i>E.P.</i>	100		202	16.3	15.0	0.4	30	119	6.9					

(Foods arranged alphabetically within the 15 basic food groups as outlined in text Table II)

	Weight in gms.	Waste %	Calories	Protein gm.	Fat gm.	Carbo- hydrate gm.	Calcium mg.	Phos- phorus mg.	Iron mg.	Vitamin A I.U.	Thiamin mg.	Ribo- flavin mg.	Niacin mg.	Ascorbic acid mg.
<i>I. Meat, Fish, and Poultry—Contd.</i>														
Tongue, beef, canned or cured.....	60		157	11.6	12.2	0.2	16	118	3.60					
Tongue, beef, boiled.....	100		229	21.8	15.8	0	11	196	3.4					
Trout, raw, whole, <i>A.P.</i> .....	100	51	47	9.4	1.0	0	10	108	0.5		(.04)	(.03)	(1.72)	
Trout, raw, whole, <i>E.P.</i> .....	100		96	19.2	2.1	0	21	220	1.1		(.09)	(.05)	(3.50)	
Trout, cooked.....	70		67	13.4	1.5	0	13	143	0.70					
Tuna fish, canned, <i>A.P.</i> or <i>E.P.</i> .....	100		194	24.2	10.8	0	27	278	1.3	30	.04	.14	10.20	
Tuna fish, <i>Fr.</i> , <i>E.P.</i> .....	100		209	26.6	11.4	0	19	195	0.90					
Turkey, <i>Fr.</i> , med. fat, <i>A.P.</i> .....	100	33	176	13.5	13.5	0	13	237	3.3		.08	.16	5.30	
Turkey, <i>Fr.</i> , med. fat, <i>E.P.</i> .....	100		262	20.1	20.2	0	20	354	4.9		.13	.24	7.90	
Turkey, cooked, white meat.....	100		148	31.8	2.3	0	20	373						
Turkey, cooked, dark meat.....	100		176	27.3	7.4	0	23	423						
Turtle, green, <i>E.P.</i> .....	100		84	19.8	0.5	0	22	227	1.09					
Veal legs, med. fat, <i>A.P.</i> .....	100	23	133	15.4	7.9	0	9	167	1.8		.14	.24	5.77	
Veal legs, med. fat, <i>E.P.</i> .....	100		174	20.0	10.4	0	12	217	2.3		.18	.31	7.49	
Veal leg roast.....	100		231	32.2	11.4	0	15	287	3.60					
Veal cutlet.....	70		101	19.9	2.4	0	9	160	2.10					
Veal loin chop.....	60		79	12.2	3.3	0	7	132	1.83					
White fish, <i>E.P.</i> .....	100		150	22.9	6.5	0	150	263	0.42					
White fish, fried.....	100		210	19.3	11.9	6.4	48	258	0.70					
White fish, steamed.....	100		102	22.4	1.4	0	42	189	1.00					
<i>II. Eggs</i>														
Eggs, fr. hen, 2 each, <i>A.P.</i> .....	100	11	140	11.4	10.2	0.6	48	197	2.4	880	.12	.33	.06	
Eggs, fr. hen, <i>E.P.</i> .....	100		158	12.8	11.5	0.7	54	210	2.7	990	.14	.37	.06	
Egg white.....	30		14	3.2	0	0.2	4	5	0.03					
Egg yolk.....	16		57	2.6	5.1	0.1	21	95	1.38					
Eggs, dried, whole, <i>A.P.</i> or <i>E.P.</i> .....	100		572	(46.7)	(41.9)	(2)	(209)	(818)	(11.0)	5,600	.24	(1.10)	.26	
<i>III. Milk and Milk Products</i>														
Cheese, American cheddar, <i>E.P.</i> .....	100		394	23.9	32.3	2.0	873	610	1.0	1,430	.04	.48	.03	
Cheese, cottage, <i>E.P.</i> .....	100		100	19.2	.8	4.0	82	263	0.2	(70)	(.01)	(.13)		
Cheese, cream, <i>E.P.</i> .....	100		336	7.0	33.3	1.8	360	262	0.49					
Cheese, Camembert, <i>E.P.</i> .....	100		301	19.6	24.9	0	675	493	0.91					
Cheese, Dutch, <i>E.P.</i> .....	100		308	37.1	17.7	0	900	478	0.78					
Cheese, Edam, <i>E.P.</i> .....	100		304	26.9	19.9	3.8								
Cheese, Gruyere, <i>E.P.</i> .....	100		306	33.2	28.2	4.8	1,080	698	0.26					
Cheese, Lieder Krantz, <i>E.P.</i> .....	100		288	16.8	24.5	0								
Cheese, Limburger, American, <i>E.P.</i> .....	100		382	28.5	29.8	0								
Cheese, Munster, American, <i>E.P.</i> .....	100		64	9.9	2.8	0								
Cheese, Parmesan, <i>E.P.</i> .....	100		346	43.5	19.1	0	1,220	772	0.37					



(Foods arranged alphabetically within the 15 basic food groups as outlined in text Table II)

	Weight in gms.	Waste %	Calories	Protein gm.	Fat gm.	Carbo- hydrate gm.	Calcium mg.	Phos- phorus mg.	Iron mg.	Vitamin A I.U.	Thiamin mg.	Ribo- flavin mg.	Niacin mg.	Ascorbic acid mg.
<b>III. Milk and Milk Products—Contd.</b>														
Cheese, Pimento (cheddar), <i>E.P.</i> .....	100		352	16.0	32.0	0								
Cheese, Pineapple, <i>E.P.</i> .....	100		480	29.9	38.9	2.6								
Cheese, Pot, <i>E.P.</i> .....	100		193	28.0	9.0	0	100	326						
Cheese, Roquefort, <i>E.P.</i> .....	100		363	22.6	29.5	1.8								
Cheese, Swiss, <i>E.P.</i> .....	100		430	27.6	34.9	1.3	1,086	812	1.20					
Cheese, processed, canned (B), <i>E.P.</i> .....	100		384	22.0	31.5	3.0	871	700	1.0	1,420	.02	.44	.10	
Cream, light or table.....	100		208	2.9	20.0	4.0	90	80	.2	1,200	.03	.13		
Cream, heavy or whipping.....	100		381	2.2	40.0	3.0	99	77	0.22					
Ice cream, vanilla.....	100		213	3.9	13.0	20.0	80	60	.2	330	.03	.26	.11	
Ice cream, vanilla, ½ quart.....	65		138	2.5	8.4	13.0	52	39	.13	214	.019	.16	.07	
Milk, buttermilk.....	100		39	3.5	0.5	5.0	105	97	.2	(20)	(.02)	(.18)	(.11)	(1)
Milk, buttermilk, ½ pint.....	250		97.5	8.7	1.25	12.5	262	243	5.0	(50)	(.05)	(.45)	(.275)	(2.5)
Milk, condensed, sweetened.....	100		328	8.1	8.4	55	293	231	.5	430	(.05)	(.42)	(.20)	(1)
Milk, dry skim.....	100		359	35.6	1.0	52	1,239	975	2.0	(60)	.34	1.93	1.06	7
Milk, Acidophilus.....	100		47	3.4	2.0	3.8								
Milk, evaporated, unsweetened.....	100		139	7.0	7.9	10	239	188	.4	410	.05	.36	.17	1
Milk, fr., whole.....	100		69	3.5	3.9	5	118	93	.2	170	.04	.18	.11	1
Milk, fr., whole, ½ pint.....	250		173	8.8	9.8	12.5	295	232.5	.5	425	.10	.45	.28	2.5
Milk, powder, whole.....	100		496	25.8	26.7	38	950	723	1.6	1,410	.31	1.59	.66	7
Milk, fresh, skim.....	100		37	3.7	0.2	5	122	96	0.25					
Milk, fresh, goat.....	100		69	4.0	4.2	3.8	128	103						
Milk, evaporated, goat.....	100		127	7.0	7.1	8.8								
Milk, fr., human.....	100		62	1.5	3.3	6.5	20	20	0.15					
Milk, soybean.....	100		40	3.5	2.4	0.6	34	40						
<b>IV. Fats, Butter and Spreads</b>														
Army spread, canned (B).....	100		557	6.8	55.9	7	135	241	0.3	2,860	.03	.20	.11	
Butter.....	100		733.0	0.6	81.0	0.4	16.0	16.0	0.20	3,190	.00	.01	.10	0
Butter, 1 square.....	10		73.0	.06	8.1	.04	1.6	1.6	.02	319		.001	.011	
Carter's Spread, canned (B).....	100		732	1.1	80.8	0	47		0.5	1,700	.01	.04	.04	
<b>V. Fats, Other</b>														
French dressing.....	100		315		35.0	0	0	0	0	(0)	(0)	(0)	(0)	(0)
French dressing, 1 tablespoon.....	15		463		52.5					(5)	(0)	.01	.11	0
Lard.....	100		900	0	100.0	0	0	0	0	(0)	(0)	(0)	(0)	(0)
Lard substitute.....	100		900	0	100.0	0	0	0	0	(0)	(0)	(0)	(0)	0
Mayonnaise.....	100		662	1.10	73.1	0	9.0	41.0	0.60	210	(.03)	(.04)	0	
Mayonnaise, 1 tablespoon.....	10		66	0.11	7.3		0.9	4.1	.06	21	(.003)	(.004)		
Oils and cooking oils.....	100		900	0	100.0	0	0	0	0					

(Foods arranged alphabetically within the 15 basic food groups as outlined in text Table I)

	Weight in gms.	Waste %	Calories	Protein gm.	Fat gm.	Carbo- hydrate gm.	Calcium mg.	Phos- phorus mg.	Iron mg.	Vitamin A I.U.	Thiamin mg.	Ribo- flavin mg.	Niacin mg.	Ascorbic acid mg.
<b>VI. Sugars and Syrups</b>														
Applebutter, canned (B).....	100		208	0.4	1.1	49	11	(14)	0.1	0	.01	.02	.15	2
Gelatine dessert powder.....	100		394	9.4	0	89				(0)	(0)	(0)	(0)	(0)
Glucose or dextrose.....	100		330	0	0	82								
Honey.....	100		321	0.3	0	80	4	18	0.7		.01	.07	.11	2
Jams, assorted and preserves.....	100		254	0.5	0	63	21.0	14.0	.3	10	.010	.02	.15	1.0
Jams, assorted, 1 tablespoon.....	20		51	0.1	0	12.6	4.2	2.8	.06	2	.002	.004	.03	.2
Jam, fig.....	100		301	0.4	0.1	75	51	14	1.2	10	.01	.02	.15	9
Jam, grape.....	100		303	(.4)	(.1)	(75)	(12)	(12)	(1.4)	30	.02	.03	.12	1
Jam, plum.....	100		305	0.4	0.1	75	12	12	1.4	320	.02	.02	.39	11
Jelly.....	100		261	0.2	0	65	14	8	.3	(10)	(.01)	(.02)	(.15)	1
Jelly, 1 tablespoon.....	20		52	.04	0	13	2.8	1.6	.06	(2)	(.002)	(.004)	(.03)	.2
Marmalade, orange.....	100		287	0.9	0.4	70	(21)	(14)	(.3)	0	(.02)	(.02)	.07	8
Molasses, cane, med.....	100		240			60	273	30	6.7		.05	(.20)	.11	
Pudding, dessert powder (no skim milk).....	100		394	9.4	0	89	35	5	0.9		.00	(.02)	.07	
Syrup, corn, table.....	100		296	0	0	74	0	0	0	0	(.00)	(.01)	0	
Sugar, powdered and granulated.....	100		400	0	0	100	76	37	0	0	0	0	0	
Sugar, powdered and granulated, 1 tablespoon.....	12		48	0	0	12								
Sugar, brown.....	100		354	0	0	96								
<b>VII. Desserts and Sweets</b>														
Almond paste.....	100		407	13.2	34.5	10.9								
Apple pie.....	100		225	2.3	8.7	32.6								
Cakes, angel food.....	50		140	4.2	0.1	29.3								
Cake, jelly roll.....	50		210	2.4	9.5	27.7								
Cake, plain.....	50		170	3.2	4.1	28.5								
Cake, sponge.....	50		160	4.7	3.5	26.7								
Candy, butterscotch.....	100		436	0	12.0	82.0								
Candy, caramels.....	100		428	2.0	12.0	78.0								
Candy, caramel, 1 piece.....	10		43	.2	1.2	7.8								
Candy, chocolate, bitter.....	100		570	5.5	52.9	18.0	92	455	3.00					
Candy, chocolate, sweetened, plain.....	100		516	2.0	29.8	60.0	26	139	3.28					
Candy, chocolate, sweetened, 1 bar.....	43		222	.9	12.9	25.8	11.2	59.8	1.41					
Candy, chocolate, sweetened, milk.....	100		542	6.0	33.5	54.0	175	215	1.67					
Candy, chocolate, sweetened, milk with almonds.....	100		583	8.0	38.6	51.0								
Candy, chocolate, sweetened, milk with almonds, 1 bar.....	35		204	2.8	13.5	17.9								
Candy, fudge, plain.....	100		396	2.0	4.0	88.0								
Candy, hard.....	100		396	0	0	99.0								
Candy, marshmallows.....	100		347	6.7		80.0								
Candy, marshmallow, 1 each.....	11		38.1	.7		8.8								



*VII. Desserts and Sweets—Contd.*

Weight in gms.	Waste %	Calories	Protein gm.	Fat gm.	Carbo- hydrate gm.	Calcium mg.	Phos- phorus mg.	Iron mg.	Vitamin A I.U.	Thiamin mg.	Ribo- flavin mg.	Niacin mg.	Ascorbic acid mg.
100		72	1.8	2.7	10.1								
100		110	5.2	5.9	9.4								
100		120	4.7	5.3	12.7								
100		270	5.5	14.4	27.7								
100		428	6.7	21.0	53.1								
45		192.6	3.0	9.5	23.9								
60		205	2.5	7.1	30.8	36	81	1.26					
100		293	3.5	23.0	18.0	150	120	0.17					
100		109	0.1	0.1	27.0								
100		134	0.5	0	33.0								
100		397	0.1	0.1	98.8								
100		396	2.1	4.1	87.7								

*VIII. Puddings*

100		120	3.2	3.7	18.2	117	95	0.17					
100		140	3.3	3.8	21.2								
100		190	4.5	9.3	20.8	138	120	0.14					
100		40	0.9	1.1	5.8								
100		330	3.8	15.6	40.8								
100		135	3.2	3.8	20.8	116	95	0.98					

*IX. Cereals and Grain Products*

100		400	13.8	4.5	58.0	77	1,336	16.67					
100		358	8.2	1.0	79	16	189	2.0		.05		2.75	
100		415	8.8	9.7	73	116	260	5.1	0	.15	.17	1.66	
100		445	13.3	2.3	71.5	123	916	9.67					
100		411	16.5	4.6	57.5	120	1,215	12.70					
100		260	8.5	2.0	52.0	50.0	160.0	2.70		.280	.26	2.90	
20		52	1.7	.4	10.4	10.0	32.0	.54		.056	.052	.58	
100		260	8.5	2.0	52	56.0	110.0	1.80		.240	.150	2.20	
20		52	1.7	.4	10.4	11.2	22.0	.36		.048	.030	0.44	
100		259.0	9.0	3.0	49.0	78.0	262.0	2.60		.30	.13	3.54	
20		51.8	1.8	.6	9.8	15.6	52.4	.52		.015	.026	.708	
100		230	6.7	3.3	43.3	129	185	3.00					
100		275	9.0	3.0	53.0								
100		254	9.0	0.6	53.2	24	148	2.30					
100		252	8.6	2.9	47.9								

(Foods arranged alphabetically within the 15 basic food groups as outlined in text Table II)

## IX. Cereals and Grain Products—Contd.

	Weight in gms.	Waste %	Calories	Protein gm.	Fat gm.	Carbo- hydrate gm.	Calcium mg.	Phos- phorus mg.	Iron mg.	Vitamin A I.U.	Thiamin mg.	Ribo- flavin mg.	Niacin mg.	Ascorbic acid mg.
Cookies, assorted.....	100		393	5.5	14.6	60	22	65	0.7		.04	.04	.60	
Cornflakes.....	100		358	7.9	0.7	80	23	56	(1.3)		.04	.09	1.40	
Cornflakes, restored product.....	100		358	7.9	0.7	80	23	56	1.3		.38	.09	1.77	
Cornmeal, bolted, degerminated, white.....	100		364	9.5	1.5	78	16	140	0.9		.18	.06	1.61	
Cornmeal, yellow, <i>E.P.</i> .....	100		357	8.8	1.1	78	16	140	0.9	(100)	.18	.07	1.43	
Cornmeal, yellow, cooked.....	100		60	1.4	0.8	11.9	5	39	0.20				0	
Cornstarch.....	100		352	0.5	0.2	87		90		0	0	0		
Crackles.....	100		368	10.9	0.4	80.2	22	102	1.5		.16	.05	.59	
Crackermeal and crackers, assorted.....	100		417	9.6	9.6	73								
Flour, arrowroot.....	100		400	0	0	100.0								
Flour, barley.....	100		353	10.5	2.2	72.8								
Flour, buckwheat, light.....	100		355	6.3	1.1	80	11	88	1.0		.13		(4.41)	
Flour, G.I., white, enriched (B).....	100		355	11.2	1.1	75	16	101	2.9		.44	.26	3.52	
Flour, graham.....	100		375	11.4	2.4	74.6	35	306	3.70					
Flour, pancake.....	100		343	10.3	1.5	72	389	673	1.0		.03			
Flour, rye.....	100		360	6.8	0.9	78.7	18	289	2.60					
Flour, soya ( <i>see</i> Legumes)														
Flour, soybean ( <i>see</i> Legumes)														
Flour, wholewheat.....	100		358	13.0	2.0	72	35	306	3.5		.47	.11	4.41	
Graham crackers.....	100		417	7.9	9.9	74	20	200	2.0		.03	.12	1.50	
Grapenuts.....	100		381	10.6	0.6	83.2	48	333	5.64					
Grapenut flakes.....	100		367	11.7	1.2	77.3								
Holland rusk.....	100		376	12.1	5.1	70.4					0	.01	.02	
Hominy, canned, drained solids.....	100		68	1.8	0.2	15	2	15	0.2					
Hominy, grits, <i>E.P.</i> .....	100		357	8.5	0.8	79	11	70	0.9		.13	.02	1.37	
Hominy, grits, cooked.....	200		130	4.0	0	28	4	40	0.2					
Krumbles.....	100		377	9.2	1.2	82.0	37	337	10.67		.10	.06	2.03	
Macaroni, <i>E.P.</i> .....	100		361	13.0	1.4	74	22	144	1.2					
Macaroni, boiled.....	240		220	7.2	3.6	37.9	9.6	60	0.6					
Macaroni, with cheese.....	115		245	8.7	14.7	17.2	229	186	0.4					
Matzoth.....	100		340	15.0	0	70.0				(180)	(.07)	(.06)	(2.09)	
Noodles, egg, <i>E.P.</i> .....	100		321	11.1	2.7	63	23	122	1.4		.63	.14	1.30	
Oatmeal, dry, uncooked.....	100		400	15.4	7.4	68	65	387	5.2					
Oatmeal, cooked.....	200		180	8.0	2.0	31	22	130	1.18					
Pep.....	100		374	12.2	1.9	77.1								
Rice flakes.....	100		383	10.5	0.9	83.2	12	181	0.40		.21	.10	6.00	
Rice flakes, restored product.....	100		363	7.7	0.5	82	(9)	(97)	2.2					
Rice Krispies.....	100		380	6.0	0.3	88.4	11	100	2.67					
Rice, natural brown.....	100		351	6.7	2.2	76.1	84	290	2.00		(.01)	(.06)	(.66)	
Rice, puffed or flakes.....	100		362	6.7	0.3	83	9	96	0.9					



(Foods arranged alphabetically within the 15 basic food groups as outlined in text Table II)

	Weight in gms.	Waste %	Calories	Protein gm.	Fat gm.	Carbo- hydrate gm.	Calcium mg.	Phos- phorus mg.	Iron mg.	Vitamin A I.U.	Thiamin mg.	Ribo- flavin mg.	Niacin mg.	Ascorbic acid mg.
<i>IX. Cereals and Grain Products—Contd.</i>														
Rice, puffed, restored product.....	100		362	6.7	0.3	83	9	96	(2.2)		(.33)	(.07)	(4.41)	
Rice, white, uncooked.....	100		347	7.6	0.3	79	9	92	0.7		.06	.06	.66	
Rice, white, cooked.....	100		110	2.3	0.9	22.5	2	24	0.2					
Rice, wild.....	100		325	14.0	0.9	65.4								
Rolls, cinnamon.....	100		304	7.8	5.4	56	37	69	0.7	5	.21	.26	2.64	
Rolls, parkerhouse.....	100		304	8.2	6.1	54	63	97	0.8	5	.21	.26	2.64	
Shredded ralston.....	100		339	8.5	1.0	74.0								
Spaghetti.....	100		361	13.0	1.4	74	22	144	1.2		.08	.06	1.96	
Tapioca.....	100		348	0.6	0.2	86	16	.6	1.6		(0)	(0)	(0)	
Wheat cereal, farina, uncooked.....	100		368	11.0	0.9	79	21	155	0.8		.06	.06	.86	
Wheat, cereal, farina, enriched, uncooked.....	100		368	11.0	0.9	79	21	155	(3.5)		(.44)	(.26)	(5.30)	
Wheat, Cream of (new 5 min.).....	100		352	12.0	1.3	73	504	590	42.40					
Wheat, Cream of, cooked.....	70		115	3.4	0	24.7			0.58					
Wheat germ.....	100						71	1,050	10.00					
Wheaties.....	100		375	12.5	1.2	78.5								
Wheat, puffed, restored product.....	100		373	13.4	1.7	76	40	420	4.1		.44	.12	5.90	
Wheat, shredded.....	100		374	11.4	1.4	79	41	324	4.5		.21	.15	4.19	
Zweiback.....	100		422	9.8	9.9	73.5								
<i>X. Legumes</i>														
Beans, dry, kidney, red.....	100		350	22.0	1.5	62	148	463	10.3		.49	.34	2.29	
Beans, kidney, red, canned.....	250		255	17.5	0.5	43.3	97.5	355	25.75					
Beans, dry, lima.....	100		343	20.7	1.3	62	68	381	7.5		.53	.14	1.39	
Beans, hyacinth, dried.....	100		343	22.2	1.5	60.1	244	390	3.5					
Beans, Mung, dried.....	100		354	24.3	1.4	61.1	49	286	3.2		.985	.094	2.600	3
Beans, dry, navy.....	100		350	22.0	1.5	62	148	463	10.3		.52	.34	2.00	(1)
Cocoanut, dried, shredded.....	100		578	3.6	39.1	53	43	191	5.0		(.03)		(.40)	
Cocoanut, fresh.....	100		590	5.7	50.6	27.9	24	74	2.67					
Lentils, dried.....	100		331	25.7	1.0	54.7	102	383	8.6					
Lentils, cooked.....	100		205	12.0	4.5	28.0	32	131	2.6					
Nuts, assorted, shelled.....	100		671	17.4	58.8	18	67	395	2.0		.19	.13	16.20	
Peanut butter.....	100		619	26.1	47.8	21	74	393	1.9		.40	.13	16.00	
Peanuts, roasted, shelled.....	100		601	26.9	44.2	24	67	395	2.0		.93	.14	1.30	
Peas, black-eyed, cowpeas.....	100		352	22.9	1.4	62	77	411	6.0	50	.279	.18	2.84	
Pea-chick, dried.....	100		343	17.2	1.4	65.5	177	332	7.5	453	.65			
Peas, split, dry.....	100		355	24.5	1.0	62	73	397	6.0	17				
Peas, split, cooked.....	120		150	10.0	0	26.3	13.2	146	2.09					
Soup, dehydrated, Navy bean (B).....	100		332	17.6	1.1	63	133	(463)	8.5	60	.42	.19	2.18	1
Soup, dehydrated, pea (B).....	100		336	20.5	1.1	61	70	(397)	6.7	220	.57	.19	3.06	1
Soya flour, flakes or grits, 1 percent or less fat.....	100		239	42.2	1.0	15#	330	619	13.0	40	.73	.44	5.29	

## X. Legumes—Contd.

Weight in gms.	Waste %	Calories	Protein gm.	Fat gm.	Carbo- hydrate gm.	Calcium mg.	Phos- phorus mg.	Iron mg.	Vitamin A I.U.	Thiamin mg.	Ribo- flavin mg.	Niacin mg.	Ascorbic acid mg.
100		262	40.1	5.1	14#	330	619	13.0	110	.60	.40	4.19	
100		385	34.8	22.0	12#	280	599	12.1	140	.51	.35	3.74	
100		350	34.8	18.1	12#	227	585	8.4	190	.97	.32	3.04	
Soybean milk, (See milk and milk products)													
100		45	3.0	0.6	7.0	170	62	3.4	9,200				83
100		20	1.6	.2	3	14	26	.6	510	.07	.10	.86	15
100									840	.07	.11	.86	15
100		20	1.7	.1	3	14	26	.6	50	.05	.06	.75	15
100									80	.05	.07	.75	14
100	25	20	1.5	.2	3	16	30	.7	730	.14	.09	.86	47
100		27	2.2	.2	4	21	40	.9	970	.19	.12	1.15	63
100		52	3.4	0.2	9.1	45	55	1.6			.566		17
100		29	2.8	0.1	4.2	28	53	0.9			.08	.53	15
100		17	1.0	.1	3	42	29	.9	310	.03	.03	.33	3
100									470	.03	.04	.33	3
100	10	39	2.2	.2	7	58	40	1.3	540	.07	.11	.44	19
100		43	2.4	.2	8	65	44	1.4	600	.08	.12	.49	21
100	53	19	1.6	.1	3	61	36	.6	1,190	.04	.11	.42	46
100		39	3.3	.2	6	130	76	1.3	2,540	.09	.24	.90	99
100	23	43	3.4	.4	7	26	60	1.0	(270)	.10		(.22)	93
100		57	4.4	.4	9	34	78	1.3	(350)	.13		(.29)	120
100		70	6.0	0.3	10.9	224	78	0.8	16,692				102
100		110	2.5	0.1	24.7	75	78	1.4		.045			
100		360	(17.6)	(2.4)	(67)	(328)	(385)	(4.9)	(400)	.45	.34	3.99	200
100		360	(17.6)	(2.4)	(67)	(328)	(385)	(4.9)	(400)	.18	(.34)	(3.99)	350
100	27	21	1.0	0.1	4	34	23	0.4	30	.06	.04	.15	37
100		29	1.4	0.2	5	46	31	0.5	40	.08	.05	.22	50
100		30	2.8	0.2	4.3	173	46	1.6					
100		16	1.5	0.1	2.3	123	54	1.1	150	.02	.02	.35	41
100		39	1.0	0.3	.8	25	24	0.5	11,900	.02	.02	.35	2
100		356	(9.7)	(2.4)	(74)	(304)	(268)	(7.4)	18,600	.02	.02	.35	2
100	12	39	1.1	0.3	8	34	33	0.7	150,000	.27	.25	3.00	12
100		44	1.2	0.3	9	39	37	0.8	13,200	.06	.05	.49	4
100		63	5.9	0.7	8.3	70	111	3.2	15,000	.06	.06	.55	5
100		23	1.4	0.2	4	0	36	4.0	7,816				
100		44	3.8	0.6	5.8	48	57	8.4	8,400	.05	.12	.22	30
100		21	1.9	0.2	3.0	53	35	2.8	60				25
Chrysanthemum E.P.													

## XI. Vegetables, Leafy Green or Yellow

Amaranth, E.P.	
Asparagus, canned, green, solids and liquids.	
Asparagus, canned, green, drained solids (62 percent)	
Asparagus, canned, white, solids and liquids.	
Asparagus, canned, white, drained solids (62 percent)	
Asparagus, Fr., tender shoots, A.P.	
Asparagus, Fr., tender shoots, E.P.	
Bean, hyacinth, Fr.	
Bean, Mung, sprouted.	
Beans, string, canned, solids and liquids.	
Beans, string, canned, drained solids (65 percent)	
Beans, string, Fr., (common or kidney), A.P.	
Beans, string, Fr., (common or kidney), E.P.	
Broccoli, flower stalks, Fr., A.P.	
Broccoli, flower stalks, Fr., E.P.	
Brussels sprouts, Fr., A.P.	
Brussels sprouts, Fr., E.P.	
Burcloves, toothed.	
Burdock.	
Cabbage, dehydrated (B)	
Cabbage, dehydrated, sulfited (B)	
Cabbage, Fr., A.P.	
Cabbage, Fr., E.P.	
Cabbage, chinese, flat.	
Cabbage, white mustard.	
Carrots, canned, solids and liquids.	
Carrots, canned, drained solids (64 percent)	
Carrots, dehydrated (B)	
Carrots, Fr., roots, A.P.	
Carrots, Fr., roots, E.P.	
Cedar, E.P.	
Chard, leaves and stalks, Fr., A.P. or E.P.	
Chives, E.P.	
Chrysanthemum E.P.	





(Foods arranged alphabetically within the 15 basic food groups as outlined in text Table II)

	Weight in gms.	Waste %	Calories	Protein gm.	Fat gm.	Carbo- hydrate gm.	Calcium mg.	Phos- phorus mg.	Iron mg.	Vitamin A I.U.	Thiamin mg.	Ribo- flavin mg.	Niacin mg.	Ascorbic acid mg.
<i>XI. Vegetables, Leafy Green or Yellow—Contd.</i>														
Spinach, canned, solids and liquids.....	100		30	2.3	0.5	4	0	36	2.0	5,200	.02	.08	.31	11
Spinach, canned, drained solids (73%).....	100									7,140	.02	.10	.31	11
Spinach leaves, Fr., A.P.....	100	18	21	1.9	0.2	3	0	45	2.5	7,400	.09	.20	.55	51
Spinach, leaves, Fr., E.P.....	100		39	2.3	0.3	8	20	55	3.0	9,000	.10	.24	.68	62
Squash, canned.....	100	35	12	0.4	0.1	3	10	10	0.3	(950)	.01	(.05)	(.60)	3
Squash, summer, Fr., A.P.....	100		19	0.6	0.1	4	15	15	0.4	160	.05	.06	.72	21
Squash, summer, Fr., E.P.....	100		32	1.1	0.2	7	14	21	0.4	870	.04	.04	.53	13
Squash, winter, Fr., A.P.....	100	26	44	1.5	0.3	9	19	28	0.6	1,170	.05	.06	.72	18
Squash, winter, Fr., E.P.....	100		25	2.3	0.2	3.5	107	43	1.4	3,270	.087	.117		15
Swamp cabbage.....	100	16	32	2.4	0.3	5	218	42	2.0	7,600	.12	.44	.49	102
Turnips greens, Fr., A.P.....	100		35	2.9	0.4	5	259	50	2.4	9,000	.14	.53	.57	121
Turnips greens, Fr., E.P.....	100		21	1.8	0.3	2.8	30	57	4.0	4,700	.078	.169	.92	166
Vine spinach (Malabar night shade).....	100		18	1.6	0.3	2.3	132	35	1.7				.067	4
Watercress.....	100		94	2.0	0.2	21.0	29	46	0.7					
Yam, chinese.....	100													
<i>XII. Tomatoes</i>														
Tomato catsup.....	100		112	2.0	0.4	25	12	18	0.8	(1,540)	.12	.07	2.89	10
Tomatoes, canned.....	100		22	1.0	0.2	4	7	21	0.6	940	.05	.03	.68	17
Tomatoes, Fr., red, A.P.....	100	2	23	1.0	0.3	4	7	20	0.6	1,100	.06	.04	.66	25
Tomatoes, Fr., red, E.P.....	100		23	1.0	0.3	4	7	21	0.6	1,130	.06	.04	.68	25
Tomato juice, canned.....	100		23	1.0	0.2	4	7	15	0.4	850	.05	.03	.75	13
Tomato juice, dehydrated (B).....	100		365	(15.9)	(3.3)	(68)	(100)	(213)	(5.7)	7,600	.34	.30	8.02	100
Tomato puree.....	100		40	1.8	0.5	7	(14)	(30)	1.1	1,700	.09	.06	1.70	22
<i>XIII. Citrus Fruits</i>														
Grapefruit, all, Fr., A.P.....	100	34	30	0.3	0.1	7	14	13	0.2	5	.03	.01	.15	23
Grapefruit, all, Fr., E.P.....	100		44	0.5	0.2	10	21	20	0.3	10	.05	.02	.22	35
Grapefruit juice, canned.....	100		47	0.4	0.2	11	21	20	0.3	10	.02	.02	.18	34
Grapefruit sections, canned.....	100		55	0.4	0.2	13	21	20	0.3	10	.05	.02	.22	25
Lemons, Fr., A.P.....	100	38	26	0.6	0.4	5	14	7	0.4		.01	.00	.09	19
Lemons, Fr., E.P.....	100		45	0.9	0.6	9	22	11	0.6		.02	.00	.13	30
Lemon juice powder, synthetic, canned (B).....	100		392	0	0	98	0	0	0			.05	.07	860
Limes, Fr., A.P.....	100	24	39	0.6	0.1	9	17	8	0.5		(.02)	(.00)	.15	19
Limes, Fr., E.P.....	100		52	0.8	0.1	12	22	11	0.6		(.02)	(.00)	.20	25
Oranges, Fr., A.P.....	100	28	35	0.6	0.1	8	17	13	0.3	180	.06	.02	.15	32
Oranges, Fr., E.P.....	100		49	0.9	0.2	11	24	18	0.4	250	.08	.03	.22	45
Orange juice, canned.....	100		55	0.6	0.1	13	24	18	0.4	140	.07	.02	.24	39
Orange and grapefruit juice, canned.....	100		52	0.6	0.2	12	24	19	0.4	10	.04	.01	.18	34
Tangerines, Fr., A.P.....	100	29	36	0.6	0.2	8	29	13	0.2	230	.05	(.02)	(.15)	23
Tangerines, Fr., E.P.....	100		49	0.9	0.2	11	41	18	0.3	350	.07	(.02)	(.22)	32



(Foods arranged alphabetically within the 15 basic food groups as outlined in text Table II)

	Weight in gms.	Waste %	Calories	Protein gm.	Fat gm.	Carbo- hydrate gm.	Calcium mg.	Phos- phorus mg.	Iron mg.	Vitamin A I.U.	Thiamin mg.	Ribo- flavin mg.	Niacin mg.	Ascorbic acid mg.
<b>XIV. Potatoes</b>														
Potatoes, Irish, Fr., <i>A.P.</i> .....	100	16	72	1.7	0.1	16	8	41	0.6	30	.09	.03	1.01	10
Potatoes, Irish, Fr., <i>E.P.</i> .....	100		85	2.0	0.1	19	9	49	0.7	40	.11	.04	1.21	12
Potatoes, Irish, dehydrated (B).....	100		366	(8.6)	(0.4)	(82)	(42)	(220)	(4.9)	0	.14	.07	5.51	25
Potatoes, Sweet, Fr., <i>A.P.</i> .....	100	14	107	1.5	0.6	24	30	42	0.6	6,370	.09	.06	.53	20
Potatoes, Sweet, Fr., <i>E.P.</i> .....	100		126	1.8	0.7	28	35	49	0.7	7,400	.11	.06	.62	23
Potatoes, Sweet, dehydrated (B).....	100		378	(5.5)	(2.2)	(84)	(80)	(138)	(2.7)	20,000	.20	.15	2.09	20
<b>XV. Vegetables other than Leafy Green or Yellow</b>														
Arrowhead.....	100		119	5.3	0.2	24.1	8	260	1.4					4
Arrowroot.....	100		133	1.7	0.2	31.1	9	17	1.0					
Artichokes, French or Globe.....	100		59	2.9	0.4	11.9	40	94	1.89					
Artichokes, French, canned.....	100		21	0.8	0									
Artichokes, Jerusalem.....	100		80	17.0	2.2	0.1								
Astor shoot.....	100		35	3.0	0.2	5.3	138	52	2.0					
Bamboo shoot.....	100		34	2.6	0.3	5.3	18	57	0.5	11	(.08)	(.08)	(.53)	11
Bean sprouts, Fr., mung.....	100		30	2.9	0.3	4.0	40	70	1.8					(15)
Beans, green, Lima, canned, solids and liquids.....	100		76	5.1	0.4	13	18	86	1.6					7
Beans, green, Lima, canned, drained solids (70%).....	100													7
Beans, green, Lima, Fr., <i>A.P.</i> .....	100	60	51	3.0	0.3	9	25	63	0.9	160	.04	.05	.53	7
Beans, green, Lima, Fr., <i>E.P.</i> .....	100		133	7.5	0.8	24	63	158	2.3	90	.09	.05	.37	14
Beets, green, Lima, Fr., <i>E.P.</i> .....	100		55	1.5	0.1	12	18	28	0.7	210	.22	.13	.95	35
Beets, canned, solids and liquids.....	100									10	.01	.02	.20	3
Beets, canned, drained solids (66 percent).....	100									10	.01	.03	.20	2
Beets, dehydrated (B).....	100		353	(12.1)	(0.9)	(74)	(165)	(282)	(5.9)	30	.18	.31	1.41	1
Beets, Fr., common red, <i>A.P.</i> .....	100	25	34	1.2	0.1	7	20	32	0.8		.02	.03	.31	9
Beets, Fr., common red, <i>E.P.</i> .....	100		47	1.6	0.1	10	27	43	1.0		.02	.04	.40	12
Cabbage, chinese, celery.....	100		16	1.3	0.1	2.5	41	44	0.6					21
Cauliflower, Fr., <i>A.P.</i> .....	100	55	13	1.1	0.1	2	10	32	0.5	60	.05	.06	.26	34
Cauliflower, Fr., <i>E.P.</i> .....	100		31	2.4	0.2	5	22	72	1.1	140	.12	.13	.57	75
Celeriac roots.....	100		45	1.7	0.3	8.8								6
Celery, Fr., <i>A.P.</i> .....	100	37	12	0.8	0.1	2	32	25	0.3	0	.03	.02	.13	9
Celery, Fr., <i>E.P.</i> .....	100		23	1.3	0.2	4	50	40	0.5	0	.04	.04	.22	
Clover, red.....	100		33	3.0	0.3	4.6	120	49	3.4					
Corn, canned, white, solids and liquids.....	100		98	2.5	0.9	20	4	67	0.3	30	.02	.04	.88	4
Corn, canned, white, drained solids (67 percent).....	100									50	.02	.05	.88	3
Corn, canned, yellow, solids and liquids.....	100									150	.03	.04	.77	4
Corn, canned, yellow, drained solids (68 percent).....	100									220	.03	.05	.77	4
Corn, Fr., sweet, all, <i>A.P.</i> .....	100	62	42	1.4	0.5	8	2	39	0.2	90	.05	.05	.64	5
Corn, Fr., sweet, all, <i>E.P.</i> .....	100	110	110	3.7	1.2	21	6	102	0.5	240	.14	.12	1.70	12
Cucumbers, Fr., <i>A.P.</i> .....	100	30	11	0.5	0.1	2	7	15	0.2	140	.03	.04	.13	7

(Foods arranged alphabetically within the 15 basic food groups as outlined in text Table II)

*XV. Vegetables other than Leafy Green  
or Yellow—Contd.*

	Weight in gms.	Waste %	Calories	Protein gm.	Fat gm.	Carbo- hydrate gm.	Calcium mg.	Phos- phorus mg.	Iron mg.	Vitamin A I.U.	Thiamin mg.	Ribo- flavin mg.	Niacin mg.	Ascorbic acid mg.
Cucumbers, Fr., <i>E.P.</i> .....	100		16	0.7	0.1	3	10	21	0.3	200	.04	.05	.18	10
Egg plant, Fr., <i>A.P.</i> .....	100	13	26	1.0	0.2	5	13	32	0.4		.05	.04	.68	5
Egg plant, Fr., <i>E.P.</i> .....	100		30	1.1	0.2	6	15	37	0.4		.05	.04	.79	6
Garlic.....	100		123	4.4	0.2	25.8	37	49	0.8	nil				22
Ginger root.....	100		49	1.6	1.2	8.0	20	45	7.0	33				9
Gourd, bottle (calabash).....	100		17	0.5	0.1	3.6	12	15	0.4	Trace		.014		5
Gourd, wax, chinese.....	100		13	0.4	0.1	2.6	16	15	0.3					9
Horseradish root.....	100		91	3.2	0.2	19.0	100	80	2.00					
Leek.....	100		32	2.4	0.4	4.6	64	54	1.4	883	.153			18
Lotus root.....	100		52	1.6	0.1	11.2	19	59	0.5					20
Loofah (dishcloth gourd).....	100		24	1.0	0.1	4.8	23	42	0.8	56	.066	.016		7
Mushroom, all Fr., <i>A.P.</i> .....	100	9	2	(0)	.2	(0)	13	89	0.6	0	.10	.38	5.79	4
Mushroom, all Fr., <i>E.P.</i> .....	100		2	(0)	.2	(0)	14	98	0.7	0	.11	.42	6.37	5
Mushroom, black, dried.....	100		351	15.1	1.7	68.9	64	311	8.9		.634			
Onions, dehydrated (B).....	100		373	(10.8)	(1.5)	(79)	(263)	(305)	(3.3)	40	.31	.13	1.21	25
Onions, Fr., all, <i>A.P.</i> .....	100	6	46	1.3	0.2	10	30	41	0.5		.03	.02	.11	9
Onions, Fr., all, <i>E.P.</i> .....	100		49	1.4	0.2	10	32	44	0.5		.04	.02	.11	10
Onions, scallions, Fr., <i>A.P.</i> .....	100	59	19	0.4	0.1	4	13	18	0.2		(.01)	(.05)	(.04)	14
Onions, scallions, Fr., <i>F.P.</i> .....	100		50	1.0	0.2	11	32	44	0.5		(.03)	(.12)	(.11)	35
Onions, fragrant, (chinese leek).....	100		48	1.0	0.2	10.6	32	44	0.5		.030	.120	.100	35
Onions, welsh.....	100		34	1.4	0.3	6.3	24	30	0.6					27
Parsnips, Fr., <i>A.P.</i> .....	100	22	64	1.2	0.4	14	44	62	0.6	40	.09	.06	(.24)	12
Parsnips, Fr., <i>E.P.</i> .....	100		83	1.5	0.5	18	57	80	0.7	50	.11	.08	(.31)	15
Radishes, Fr., <i>A.P.</i> .....	100	51	11	0.6	0	2	11	15	0.5		.01	.02	.09	12
Radishes, Fr., <i>E.P.</i> .....	100		22	1.2	0.1	4	22	31	1.0	3	.03	.04	.15	25
Radish, chinese.....	100		18	1.0	0.1	3.3	49	26	0.7		.039		.011	21
Rutabagas, Fr., <i>A.P.</i> .....	100	15	37	0.9	0.1	8	47	35	0.3		.05	.07	.79	30
Rutabagas, Fr., <i>E.P.</i> .....	100		41	1.1	0.1	9	55	41	0.4		.06	.08	.93	35
Sauerkraut, canned, solids and liquids.....	100		18	1.1	0.2	3	46	31	0.5	10	.03	.20	.22	3
Sauerkraut, canned, drained solids (81 percent).....	100									10	.03	.22	.22	3
Taro, (dasheen).....	100		96	2.9	0.2	20.6	28	77	1.2	40		.030		Trace
Turnips, Fr., <i>A.P.</i> .....	100	13	30	1.0	0.2	6	35	30	0.4		.02	.05	.73	26
Turnips, Fr., <i>E.P.</i> .....	100		34	1.1	0.2	7	40	34	0.5		.03	.06	.84	30
Water bamboo.....	100		23	1.1	0.2	4.3	8	48	0.3					6
Waterchestnut.....	100		87	1.3	0.2	20.0	4	59	0.7	20				8
Yam bean root.....	100		58	1.2	0.2	12.8	9	20	1.9					
Zucchini.....	100		18	2.4	—	2.1								



(Foods arranged alphabetically within the 15 basic food groups as outlined in text Table II)

## XVI. Fruits other than citrus

	Weight in gms.	Waste %	Calories	Protein gm.	Fat gm.	Carbo- hydrate gm.	Calcium mg.	Phos- phorus mg.	Iron mg.	Vitamin A I.U.	Thiamin mg.	Ribo- flavin mg.	Niacin mg.	Ascorbic acid mg.
Apples, canned, sweetened	100		82	0.2	0.1	20	4	7	0.2		.01	.01	.04	3
Apples, Fr., A.P.	100	12	57	0.3	0.4	13	5	9	0.3	70	.02	.02	.09	4
Apples, Fr., E.P.	100		65	0.3	0.4	15	6	10	0.3	80	.02	.02	.09	5
Apple juice	100		43	0.1	0.1	11.2								
Applesauce, canned, sweetened	100		82	0.2	0.1	20	4	7	0.2	(50)	(.01)	(.01)	(.04)	1
Applesauce, canned, unsweetened	100		44	0.3	0.2	10.2								
Apricots, canned whole in syrup, A.P.	100	4	83	0.6	0.1	20	10	14	0.3	2,300	.02	.02	.31	4
Apricots, canned whole in syrup, E.P.	100		87	0.6	0.1	21	10	15	0.3	2,400	.02	.02	.33	4
Apricots, canned, water pack	100		31	0.5	0.1	6.9								
Apricots, Fr., A.P.	100	6	53	0.9	0.1	12	15	22	0.5	2,350	.03	.06	.66	7
Apricots, Fr., E.P.	100		57	1.0	0.1	13	16	23	0.5	2,500	.04	.06	.71	7
Apricot juice, unsweetened	100		46	0.5	0.4	10.2								
Avocado, Fr., A.P.	100	30	130	1.3	12.1	4	13	31	1.0	140	.07	.11	.75	14
Avocado, Fr., E.P.	100		183	2.0	17.2	5	19	44	1.4	200	.10	.15	1.08	20
Bananas, Fr., A.P.	100	33	64	0.8	0.1	15	5	19	0.4	240	.03	.05	.37	7
Bananas, Fr., E.P.	100		99	1.2	0.2	23	8	28	0.6	350	.04	.07	.57	10
Bananas, plain	100		123	1.2	0.3	28.8	6	16	0.5	141			.18	3
Blackberries, canned	100		85	0.7	0.7	19	11	12	0.6	(50)				
Blackberries, canned water pack	100		49	1.0	2.0	6.8								
Blackberries, Fr.	100		63	1.2	1.1	12	17	19	0.9	90	0.3		(.31)	10
Blackberry juice, unsweetened	100		60	0.1	0.6	13.5				(70)			(.18)	
Blueberries, canned in syrup	100		109	0.4	0.4	26	10	8	0.5					
Blueberries, canned, water pack	100		37	0.4	0.4	8.0								
Blueberries, Fr.	100		68	0.6	0.6	15	16	13	0.8	100	.04		(.31)	15
Blueberry juice	100		50	0.1	0	12.4								
Breadfruit	100		149	0.1	0.2	36.7	21	48	0.3					42
Carambola	100		38	0.6	0.4	8.1	3	44	0.3			.06	.13	13
Cherries, Fr., A.P.	100	6	65	1.0	0.5	14	16	21	0.5	1,200	.05	.06	.13	14
Cherries, Fr., E.P.	100		69	1.1	0.5	15	17	22	0.5	1,300	.05	.06	.13	3
Cherries, canned in syrup, A.P.	100	4	83	0.6	0.1	20	11	13	0.3	830	.03	.02	.18	3
Cherries, canned in syrup E.P.	100		87	0.6	0.1	21	11	14	0.3	870	.03	.02	.18	3
Cherries, black, canned, water pack	100		69	0.7	0.3	15.8								
Cherries, red, canned, water pack	100		49	0.6	0.5	10.4								
Cherries, Royal Anne, canned, water pack	100		48	0.6	0.3	10.8								
Cherry juice, red, canned	100		51	0.5	0.6	10.9								
Citron, fresh, unripe	100		41	0.2	0.3	9.4	64	20	0.70					
Cranberries, dehydrated (B)	100		407	(3.3)	(5.1)	(87)	(112)	(88)	(4.1)	550	.22	.25	1.10	34
Cranberries, Fr.	100		52	0.4	0.7	11	14	11	0.6	40			(.13)	12
Cranberry sauce, canned	100		207	0.1	0.3	51	8	7	0.3	(10)				(5)
Dates, fresh	100		153			35.8	71	49	5.07					

(Foods arranged alphabetically within the 15 basic food groups as outlined in text Table II)

XVI. *Fruits other than citrus*—Contd.

	Weight in gms.	Waste %	Calories	Protein gm.	Fat gm.	Carbo- hydrate gm.	Calcium mg.	Phos- phorus mg.	Iron mg.	Vitamin A I.U.	Thiamin mg.	Ribo- flavin mg.	Niacin mg.	Ascorbic acid mg.
Figs, canned in syrup.....	100		126	0.8	0.3	30	35	21	0.4					
Figs, canned, water pack.....	100		46	0.5	0.1	10.8								
Figs, fresh.....	100		75	1.1	0.5	16.6	51	28	0.8	80	.044	.052		3
Fruit cocktail or salad, canned.....	100		83	0.4	0.1	20	8	12	0.3	160	.01	.01	.35	2
Fruit salad, water pack.....	100		40	0.4	0.6	8.3								
Cantaloupes, Fr. (mushmelons), <i>A.P.</i> .....	100	53	10	0.3	0.1	2	8	8	0.2	1,130	.02	.02	.02	17
Cantaloupes, Fr. (mushmelons), <i>E.P.</i> .....	100		24	0.6	0.2	5	17	16	0.4	2,400	.05	.05	.05	35
Gooseberries, green.....	100		20	1.1		3.4	28	34	0.32					
Gooseberries, ripe.....	100		40	0.6		9.2	19	19	0.58					
Gooseberries, canned in syrup.....	100		72	0.5	0.2	17.0								
Gooseberries, canned, water pack.....	100		22	0.5	0.2	4.5								
Grapes, Fr., <i>A.P.</i> .....	100	3	72	0.8	0.4	16	17	20	0.6	50	0.6	.06	.29	3
Grapes, Fr., <i>E.P.</i> .....	100		74	0.8	0.4	17	17	21	0.6	50	0.7	.06	.29	3
Grapes, seedless, canned water pack.....	100		48	0.4	0.7	10.0								
Grape juice, concord.....	100		70	0.3	0	17.3	11	11	0.30					
Guava, common.....	100		78	1.0	0.6	17.1	10	22	1.5	100		.023		121
Hawthorn.....	100		101	0.6	0.6	23.4	85	25	2.1					
Honeydew melons, Fr., <i>A.P.</i> .....	100	37	23	0.4	0.1	5	11	10	0.2	10	.03			13
Honeydew melons, Fr., <i>E.P.</i> .....	100		36	0.6	0.2	8	17	16	0.4	10	.05			20
Jujube.....	100		142	1.2	0.3	33.7	41	23	0.5					82
Kumquat.....	100		73	0.9	0	17.1	30	18	0.5					31
Litchi.....	100		72	0.9	0.3	16.4	4	34	0.3			.046		42
Loganberries, Fr.....	100		18	1.1		3.4	35	24	1.37					
Loganberries, canned in syrup.....	100		115	0.7		28.0								
Loganberries, canned, water pack.....	100		37	1.0	0.6	6.8								3
Loganberries, juice, unsweetened.....	100		34	0.2	1.0	8.4				4,800		.052		28
Loquat.....	100		48	0.4	0.3	11.0	22	36	0.3					3
Mango.....	100		74	0.6	0.3	17.2	6	18	0.2					
Mangosteen.....	100		67	0.6	1.0	13.8	7	11	0.7					
Nectarines.....	100		43	0.9	0	12.4	4	24	0.46					
Olive, Chinese, white.....	100		76	1.0	0.8	16.3	204	60	1.4					21
Passion fruit.....	100		40	2.8	0	6.2	16	54	1.12					
Papaya.....	100		47	0.5	0.2	10.9	17	13	0.3	2,529	.018	.024		54
Peaches, canned in syrup.....	100		75	0.4	0.1	18	9	13	0.2	440	.01	.02	.64	4
Peaches, canned, water pack.....	100		26	0.3	0.1	6.0								
Peaches, Fr., <i>A.P.</i> .....	100	12	47	0.4	0.1	11	7	19	0.3	1,050	.01	.04	.77	7
Peaches, Fr., <i>E.P.</i> .....	100		51	0.5	0.1	12	8	22	0.3	1,200	.01	.04	.88	8
Peach juice, unsweetened.....	100		46	0.4	0.4	10.1								
Pears, canned in syrup.....	100		75	0.2	0.1	18	8	18	0.2	30	.01	.02	.13	2
Pears, Bartlett, canned, water pack.....	100		32	0.3	0.2	7.3								



(Foods arranged alphabetically within the 15 basic food groups as outlined in text Table II)

	Weight in gms.	Waste %	Calories	Protein gm.	Fat gm.	Carbo- hydrate gm.	Calcium mg.	Phos- phorus mg.	Iron mg.	Vitamin A I.U.	Thiamin mg.	Ribo- flavin mg.	Niacin mg.	Ascorbic acid mg.
<i>XVI. Fruits other than citrus—Contd.</i>														
Pears, Fr., <i>A.P.</i> .....	100	17	57	0.6	0.3	13	11	13	0.3	40	.03	.04	.11	3
Pears, Fr., <i>E.P.</i> .....	100		70	0.7	0.4	16	13	16	0.3	50	.04	.05	.14	3
Pear juice, unsweetened.....	100		51	0.3	0.5	11.3								
Persimmon.....	100		71	0.6	0.2	16.8	10	22	0.3	2,550				45
Pineapple, canned in syrup, sliced or crushed.....	100		87	0.4	0.1	21	10	7	0.2	50	.07	.02	.18	5
Pineapple, canned, water pack, sliced.....	100		50	0.3	0.1	12.0								
Pineapple, Fr., <i>A.P.</i> .....	100	47	30	0.2	0.1	7	9	6	0.2	110	.05	(.02)	(.15)	24
Pineapple, Fr., <i>E.P.</i> .....	100		59	0.4	0.2	14	16	11	0.3	200	.09	(.04)	(.31)	45
Pineapple, juice, canned.....	100		55	0.2	0.2	13	8	10	0.1	50	.05	.02	.18	9
Plums, canned, <i>A.P.</i> .....	100	4	79	0.4	0.1	19	11	14	0.3	210	.02	.03	.33	1
Plums, canned, <i>E.P.</i> .....	100		83	0.4	0.1	20	11	15	0.3	220	.02	.03	.35	1
Plums, prune, canned, water pack.....	100		41	0.5	0.1	9.5								
Plums, Fr., <i>A.P.</i> .....	100	5	53	0.7	0.2	12	16	19	0.5	340	.05	(.04)	.53	5
Plums, Fr., <i>E.P.</i> .....	100		57	0.7	0.2	13	17	20	0.5	360	.05	(.04)	.55	5
Plum juice, unsweetened.....	100		58	0.3	0.5	13.0								
Pomegranate.....	100		95	1.3	1.1	19.9	11	41	0.5			.100		11
Prunes, canned, water pack.....	100		147	1.3	0.1	35.2								
Prune juice.....	100		79	0.4	Trace	19.3								
Pummelo.....	100		66	0.6	0.3	15.1	17	18	0.3	200	.072	.020	.500	41
Punch, canned.....	100		32	0	0	8	0	0	0					
Raspberries, Fr.....	100		55	1.7	1.0	9.7	49	52	0.99					
Raspberries, black, canned, water pack.....	100		44	1.1	1.1	7.4								
Raspberries, red, canned, water pack.....	100		41	0.8	0.9	7.5								
Raspberry juice, unsweetened.....	100		37	0.3	0.1	8.6								
Rhubarb, Fr., <i>A.P.</i> .....	100	32	14	0.3	0.1	3	30	12	0.4	70	.01		.06	10
Rhubarb, Fr., <i>E.P.</i> .....	100		19	0.5	0.1	4	44	18	0.6	100	.01		.11	15
Rhubarb, canned, water pack.....	100		18	0.5	0.7	2.3								
Soursop.....	100		74	0.9	0.3	16.9	9	30	0.4		.045			
Strawberries, Fr., <i>A.P.</i> .....	100	4	41	0.8	0.6	8	27	26	0.8	48	.03	.03	.22	63
Strawberries, Fr., <i>E.P.</i> .....	100		41	0.8	0.6	8	28	27	0.8	50	.03	.03	.24	65
Strawberries, canned in syrup.....	100		113	0.5	0.2	27.3								
Strawberries, canned, water pack.....	100		31	0.9	0.6	5.6								
Sugarapple (custard apple).....	100		92	1.7	0.5	20.2	6	10	0.3			.047		59
Sugarcane.....	100		64	0.2	0.5	14.6	8	4	1.3					1
Tamarind.....	100		140	2.7	1.3	29.4	113	96	0.60					
Watermelon, Fr., <i>A.P.</i> .....	100	54	14	0.2	0.1	3	3	6	0.1	250	.02	.03	.11	3
Watermelon, Fr., <i>E.P.</i> .....	100		32	0.5	0.2	7	7	12	0.2	540	.05	.07	.24	6

(Foods arranged alphabetically within the 15 basic food groups as outlined in text Table II)

	Weight in gms.	Waste %	Calories	Protein gm.	Fat gm.	Carbo- hydrate gm.	Calcium mg.	Phos- phorus mg.	Iron mg.	Vitamin A I.U.	Thiamin mg.	Ribo- flavin mg.	Niacin mg.	Ascorbic acid mg.
<b>XVII. Dried fruits</b>														
Apple nuggets, dehydrated (B)	100		389	(1.8)	(1.1)	(9.3)	(40)	(50)	(1.8)		.06	.06	.42	10
Apples, dried	100		307	1.4	1.0	7.3	32	48	1.5	(130)		(.13)	(.44)	
Apricots, dried	100		292	5.2	0.4	67	65	119	7.6	4,800	.08	.19	.98	10
Cranberries, dehydrated (B)	100		407	(3.3)	(5.1)	(87)	(112)	(88)	(4.1)	550	.22	.25	1.10	34
Currents, dried (See raisins for figures)														
Dates, dried	100		318	1.7	1.9	73.5								
Figs, dried	100		226	3.6		52.9	162	116	3.96					
Litchi, dried	100		299	3.6	0.5	70.0								
Peaches, dried	100		293	3.0	0.6	69	60	119	6.0	3,400		.15	(1.89)	2
Pears, dried	100		157	2.3	0.4	36.0								
Prunes, dried, <i>A.P.</i>	100	15	253	2.0	0.5	60	49	72	2.4	1,700	.07	.08	1.30	5
Prunes, dried, <i>E.P.</i>	100		299	2.3	0.6	71	58	85	2.9	2,000	.09	.10	1.52	6
Raisins, dried, seeded and seedless, incl. dried currents	100		298	2.3	0.5	71	55	110	3.0	100	.14	.10	.53	3
Raspberries, dried	100		366	7.3	1.8	80.2								
<b>XVIII. Beverages</b>														
Cocoa, dry	100		329	9.0	18.8	31	112	709	2.7		.09	.45	1.50	
Cocoa, all milk, 1 cup	166		164	5.5	7.1	19.4	182	183	.5	285	.075	.270	.19	
Cocomalt, dry	100		399	13.1	3.7	78.3	300	330	17.60					
Coffee, roasted (whole bean)	100													
Coffee, soluble (B)	100										.90	.07	8.69	
Coffee, soluble (B), 1 teaspoon	1										1.14	.35	56.00	
Malted, milk, Horlick, dry	100		417	16.4	8.8	68.0	272	402	1.30		.01	.003	.56	
Ovaltine, dry	100		412	14.3	7.4	72.1	339	563	3.50					
Postum, instant	100		356	6.6	0	82.3								
Postum, instant, 1 teaspoon	1	3.5	.06	0	.82									
Tea, dry	100											.35	6.45	
Tea, dry (1 bag)	1											.003	.06	
<b>XIX. Miscellaneous</b>														
Bouillon cubes	100		258	17.6	0	47	40	510	9.2		.02	1.02	25.62	
Capers	100		37	3.2	0.5	5.0	122	62						
Chutney, apple	100		205	0.8	0.1	50.3	27	34	1.01					
Chutney, tomato	100		154	1.1	0.1	37.2	26	37	0.93					
Horseradish	100		91	3.2	0.2	19.0	100	80	2.00					
Mince meat	100		215	5.3	6.4	34	19	73	1.5	(150)	(.02)	(.09)		(3)
Mustard, dry	100		14	2.4	0.3	0.3								
Mustard, prepared	100		76	4.7	4.1	5.0								
Olives, green, pickled, <i>A.P.</i>	100	21	113	1.2	10.7	3	80	12	1.6	(790)				



(Foods arranged alphabetically within the 15 basic food groups as outlined in text Table II)

	Weight in gms.	Waste %	Calories	Protein gm.	Fat gm.	Carbo- hydrate gm.	Calcium mg.	Phos- phorus mg.	Iron mg.	Vitamin A I.U.	Thiamin mg.	Ribo- flavin mg.	Niacin mg.	Ascorbic acid mg.
<i>XIX. Miscellaneous—Contd.</i>														
Olives, green, pickled, <i>E.P.</i> .....	100		144	1.5	13.5	4	101	15	2.0	(1,000)				
Olives, ripe.....	100		249	1.7	25.0	4.3	105	14	0.40					
Peppers, red.....	100		44	1.3	0.7	8.1								
Pickles, dill, sour, sweet.....	100		12	0.5	0.2	2								
Pickles, sweet, mustard, chopped.....	100		107	Trace	0.8	25.0	25	34	1.60					
Pimientos, canned.....	100		34	0.9	0.3	6.8								
Relishes.....	100		57	0.7	0.2	13	14	16	0.2	(.00)	(.01)	(.04)	(1)	
Soy sauce.....	100		80	4.5	1.5	12.0								
Tabasco sauce.....	100		0	0	0	0								
Worcestershire sauce.....	100		80	1.1	Trace	19.0	16	22	1.50					
Chili sauce (commercial).....	100		121	2.5	0.8	26.0	25	605	4.9		.91	1.80	11.30	
Yeast, compressed (baker's).....	100		110	13.3	0.4	13	77	1,890	20.0		16.30	4.00	40.00	
Yeast; dried (brewers').....	100		362	50.0	1.6	37								

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# TECHNICAL MANUAL HOSPITAL DIETS

CHANGES  
No. 1

WAR DEPARTMENT  
WASHINGTON 25, D. C., 1 May 1945

TM 8-500, 7 March 1945, is changed as follows:  
Substitute revised page 104, herewith, for old page 104.

Table 14. Foods rich in vitamins\*

Vitamin A		Thiamin (Vitamin B <sub>1</sub> )			
Excellent	Good	Excellent	Good	Good	Fair
Fish-liver oils	Cream	Pork, lean	Egg yolk	Fish roe	Milk, fresh
Liver	Kidney	Chicken	Brains	Codfish	(whole or skim)
Fish roe	Oysters	Kidney	Beef, lean	Sardines	
Egg yolk	Milk, whole	Liver	Mutton, lean	Whiting	Turnips
Butter	Red salmon	Peas, green			Broccoli
Cheese		Beans, lima,	Potatoes	Lettuce	Kohlrabi
	Asparagus,	green	Sweet corn	Collards	Eggplant
Kale	green		Sweet potatoes	Kale	
Spinach	Okra	Wheat germ	Brussels sprouts	Onions	Bananas
Dandelion greens	Brussels sprouts	Corn germ	Cauliflower	Leeks	Watermelon
Dock	Artichokes,	Rye germ	Cabbage	Tomatoes	Raspberries
Escarole	globe	Rice polishings	Mushrooms	Beans, wax	Blackberries
Chard	Tomatoes,	Wheat bran	Spinach	Beans, green	
Lamb's-quarters	yellow	Oats	Watercress	Beets	
Turnip tops		Wheat	Turnip greens	Parsnips	
Lettuce, green	Avocados	Rye	Garden cress	Carrots	
Collards	Guavas	Barley	Prunes	Figs	
Watercress	Cantaloupe	Rice, brown	Avocados	Plums	
Chinese cabbage	Blackberries	Peanuts	Pineapple	Pears	
Broccoli	Black currants	Soybeans	Oranges	Apples	
Mustard greens	Blueberries	Cowpeas	Grapefruit	Cantaloupe	
Beet greens	Bananas	Beans, navy	Tangerine	Dates	
Carrots	Pineapples	Peas, dried	Hazelnuts		
Sweet potatoes	Olives, green		Chestnuts		
Squash, yellow	Olives, ripe		Brazil nuts		
Peppers, sweet	Dates		Walnuts		
Tomatoes, red	Oranges, deep		Almonds		
Peas, green	yellow juice		Pecans		
Beans, green					
Apricots	Corn meal,				
Papayas	yellow				
Mangoes					
Prunes					
Peaches, yellow					

\*Data from Publication by Esther Peterson Daniel, Associate Nutrition Chemist, U. S. Dept. of Agriculture, Bureau of Home Economics.  
[AG 300.7 (1 May 45)]



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Refer to FM 21-6 for explanation of distribution formula.











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